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THE AEROPLANE

WEDNESDAY, OCT. 1 1919.

Edited by C. G. Grey

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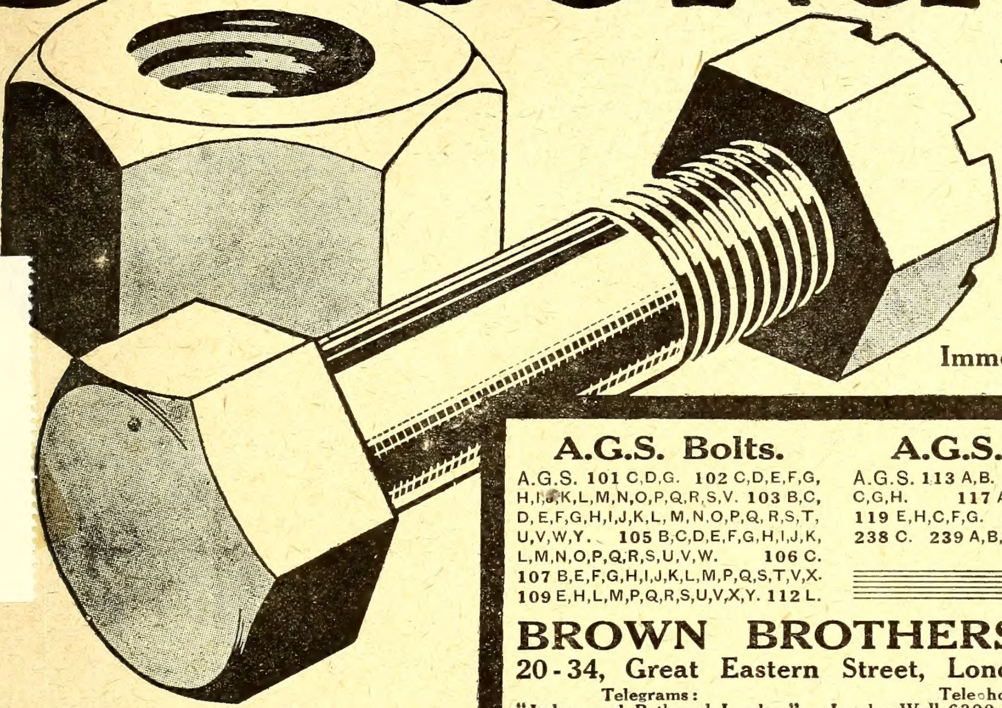

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Extract from Chap. XXI (and last).

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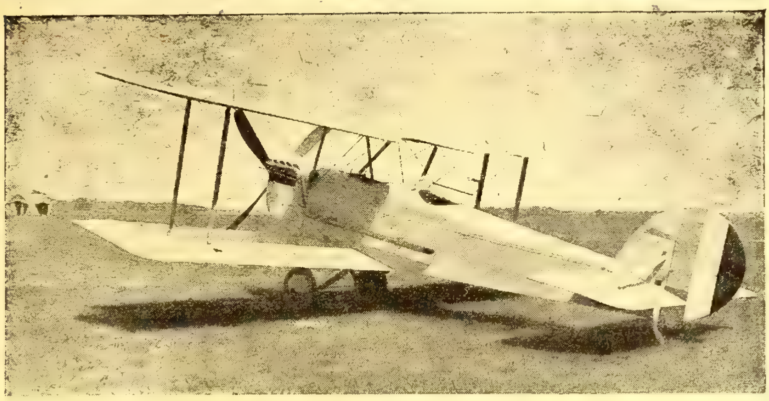

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ON THE PROJECTED SEAPLANE RACE AND ITS PROMOTERS.

Undoubtedly the Committee of the Royal Aero Club has done well in promoting a seaplane race at the end of this month, by way of wiping out the disgrace of the Schneider Cup fiasco. It is earnestly to be hoped that the race will receive adequate support in the way of entries, and that it will not be killed by the Railway Strike.

The four British machines which were entered for the Schneider Cup are presumably available in any case, and it ought to be within the capabilities of the diplomatists of the Royal Aero Club to induce the French Aircraft Industry to enter a few machines. One fears that Italy is rather too far away to send machines to compete for so small a prize unless some special inducement is offered. And there does not seem to be any prospect of entries from other countries, seeing that Germany is still outside the International Convention.

It seems worth while to discuss one or two matters affecting this race, in the hopes that the points raised may cause the minds of the Committeemen of the Royal Aero Club to operate in a manner profitable to the Club and to the future of the Sport of Flying—which, rather than the Art of Hotel-Keeping, is the proper function of the Club.

THE QUESTION OF ENTRIES.

In the first place, so far as at present announced, the scheme of the race does not appear to offer any attractions to entrants other than the four Schneider Cup machines. The £100 trophy generously presented by Lieut.-Col. McClean is, it seems, to go to the winner along with the £500 prize. There are no second and third prizes, which would induce other owners of seaplanes to enter machines which are obviously too slow to win, but which would stand a sporting chance for a "place" if two or three of the Schneider machines failed to start or to finish.

There are in fact seaplanes in half-dozens if not in dozens round the coast which could be induced to enter for the race if there were a prospect of picking up some sort of prize and a certain amount of advertisement. The Avro people have several of their standard machines fitted with floats, which put up quite a good speed. The Supermarine Co. has the flying-boats with which its pilots have been taking up passengers at Bournemouth. The Eastbourne Aviation Co. has several Shorts and Avros which have also been used for passenger-carrying. The Fairey Aviation Co. has sundry experimental seaplanes, large and small, which would also be available. Probably Short Bros. have a few undelivered machines, originally built to Government order, which could be entered. And there would be no lack of pilots for such machines. Mr. Dick Fairey remarked a few days ago, "There is our machine ready to fly, and we'll race anybody for half-a-crown or a plated crumb-scoop!" That is the spirit of a good many more constructors and pilots.

THE COMMITTEE'S LAST CHANCE.

To use an Americanism, it is up to the Committee of the Royal Aero Club to make as good a show as possible, not merely for the honour of British Sport, but for the Club's existence in the future, or, at any rate, for the continued existence of the present members of the Committee on the Committee.

Those who read the Civil Aerial Transport Notes last week (a section of this paper which one personally considers the most interesting of all) will have noticed the brilliant success of the Italian Seaplane Race round the Island of Sicily for a trophy presented by that great sportsman, the Cavaliere Florio. Twenty-seven starters and eighteen finishers in a race in which the winner's time was five hours and sixteen minutes is pretty good showing for a starving and bankrupt country, torn by internal dissention—as Italy is supposed to be.

If the Royal Aero Club of Great Britain cannot make as good a show as that, then it speaks badly for our position as the leading sporting nation in general, and for the ability of the Committee of the R.Ae.C. in particular. The Committee has this chance and this chance only of justifying its existence before the next Club election comes on in March or thereabouts.

A PAINFUL PARABLE.

There seems to be, and there has seemed to be for many years, a tendency on the part of the Committee to regard itself as having been appointed by Providence rather than as having been elected by the Members. And as a corrective to that point of view perhaps a small true story which is also a parable may serve a useful purpose.

A certain Town Council in Ireland desired to instal itself in new and important Council Offices—which it could well afford, seeing that Ireland is now one of the richest countries in Europe, thanks to the war. Unfortunately, the particular block of buildings which the Council coveted for its new offices belonged to an old lady who was distinctly hostile to the Council, so that a kind of modern democratic Naboth's vineyard was created. As the result, the Council sought statutory powers to purchase and asked for a Local Government Board Inquiry to investigate and adjudicate on the case.

A particularly affable and ingenious official was sent down to look into the matter, and, by way of helping towards an amicable settlement, he called upon the owner of the buildings, accompanied by one of the notables of the town. The lady was not amenable to persuasion, and after refusing negotiation concluded by saying: "And the Good God will see that I'm not evicted from me property!" To which her fellow-townsman replied promptly: "Well then, now, Ma'am. I wouldn't trust in Him *too* much. Don't forget that He evicted the first two tenants that ever He had!"

One may believe in the Divine Right of Kings, but one has no belief in the Divine Right of Committees. *Vox Populi Vox Dei* is the most outrageous nonsense that was ever put on paper. *Vox populi vox stulti* would be much nearer the truth, for where an incompetent Committee or Parliament remains in power too long it is because it is re-elected by the voice of the fool. Nevertheless, on occasion the fool becomes wise, and unless the Committee of the Royal Aero Club justifies its existence now that it has the chance, it may well find itself evicted as effectually at the next election as were Adam and Eve. Therefore one counsels it to make the best of its opportunities during the next three weeks so that the Seaplane Race may be a success.

The Issue at Stake.

All this may seem much of a pother to raise over a mere £500 prize and a £100 pot, but the issue is far greater than this one race. The real issue is whether the Royal Aero Club and its Committee as at present constituted is fit to have any voice in the future of Flying not only in this country but in the rest of the World. The Schneider Cup fiasco would seem to prove conclusively that it is not. The coming race is its only chance of proving that it is.

The Committee will be well advised to call into its councils men of experience: men who have organised successful competitions in flying, yachting, motoring, and athletic events: men with practical (and recent) experience in flying high-speed aeroplanes and seaplanes: men with knowledge of practical aeroplane design: men with business knowledge. At present the main Committee of the Club, the Technical Committee and the Competitions Committee are far too academic, or include too many back numbers. There is no need to increase the size of these Committees, for "Too many cooks spoil the broth" is truer than "In a multitude of councillors there is wisdom." It will suffice if the knowledgable people are asked to call on the Committee and to state their views—as a favour to the Club. The Committees themselves should be benches of judges, not debating societies.

Such men as one has suggested are readily available, and one knows some who are very willing to help. One writes without any personal interest, for one has no experience of the subjects mentioned, and, anyhow, one's position as editor of this paper debars one from taking part in the work of Committees, for it is necessary as an editor to be impartial and to view all matters from the outside. But there are many men available who have vastly greater knowledge than any members of any of the Club's Committees.

Unwarranted Criticism.

It has been suggested by mere members of the Royal Aero Club that the Committee has no right to spend £500 of the Club's money—besides the expenses of running the race—in an attempt to cover up its own mistakes, and that if the Committee wants to put itself right in the eyes of the world it should do so out of its own pocket.

With this view one disagrees most cordially. The acts of the Committee are the acts of the Club, for the Committee was elected by the Club. If the Committee makes an ass of itself, the Club has also made an ass of itself by electing the Committee. If the Committee—as is alleged—takes but little interest in and pays little attention to the opinions of the members of the Club, that is because the members of the Club pay so little attention to the opinions and views of the people whom they elect to the Committee.

Therefore one is all in favour of the Committee's spending as much as it likes of the Club's money in the effort not merely to rehabilitate itself in the eyes of the members, but in the still greater effort to rehabilitate the Club in the eyes of the World in general and the sporting community in particular.

A Bigger Proposition.

Personally one is of the opinion that the Committee has not gone far enough. Besides the £500 prize and the McClean Cup for the fastest time, one would like to see another £200 or so put up for second and third fastest time.

Still better one would like to see a further £500 put up (in prizes of £250, £150, and £100) for the first three machines home in a Sealed Handicap Race to be run concurrently with the speed race, as has been done so successfully for several years in the Aerial Derby. This would ensure a decent entry, and we should then be certain of having something of a success to put up against the brilliant showing of poor little Italy.

Objections and Answers.

It may be objected that the Club's Committee (Sporting or Technical) does not feel competent to tackle the task of working out the handicaps. If it does not, there are others who can do the job, for there has never been any trouble over the handicapping in the Aerial Derby. And, if the principle, which was so successful in motor-racing at Brooklands, of disqualifying competitors who exceeded their "declared speed" by too great a percentage were adopted, there would be no fear of run-away wins, for competitors would be more likely to over-state than under-state their speeds.

It may also be objected that it is too late in the year for such an undertaking as a big race of this sort. The answer is, firstly, that if the Club does not do something big it can make up its mind to take a back seat as a sporting body in future; and, secondly, that if due attention is paid to meteorological warnings, it is just as possible to find three fine hours at the end of October as it is to find them in the middle of the Summer. The Schneider Cup race was ruined by a perfect Summer day, which produced a perfect sea-fog. Late October may produce a clear day with a big wind which will test the value of seaplanes even in Southampton Water.

Further it may be objected that there is no time in which to organise such a race. That depends entirely on whether the Committee of the Club is willing to work for its future existence or whether it insists on holding amiable debates over a tea-pot.

There is nothing whatever about the scheme which is not perfectly workable if the Committee is willing to work. But if the Committee of the Royal Aero Club chooses to ally itself in principle and practice with the wood-workers, coal-getters, iron-founders, and railway-transporters of this country, who neither work, get, found, nor transport, then there is nothing more to be said on the subject.—C. G. G.

Those who, owing to the Railway Strike, fail to obtain THE AEROPLANE from newsagents can have the missing numbers sent to them by post for sixpence—post free—from the Publishers:—The Aeroplane and General Publishing Co., Ltd., 61, Carey Street, W.C.2.

THE STRIKE AND THE OPPORTUNITY OF AVIATION.

It would appear that the old proverb to the effect that "It is an ill wind which blows nobody any good," is justifying itself to-day as well as ever. The railway strike which is causing everybody so much inconvenience is undoubtedly affording the finest possible opportunity to those concerned with and for Civil Aviation. The records of flying during the past three or four days, as recorded in their proper place in the Civil Aerial Transport Notes, are naturally incomplete, because reports from the Provincial centres have not yet been received, and even those from the London aerodromes are far from complete, owing to the pressure of work on the organisers of Civil Aerial Transport ventures. It is, however, recorded that quite a number of people have chartered special aeroplanes to carry them on urgent business, and, undoubtedly, if more aeroplanes had been available, more of these special journeys would have been made. Also, if the organisation of Civil Aviation ventures had been more fully developed, prices would have been lower, and, probably, still more people would have travelled by air.

Even as it is, enough has been done to show that it is worth while to do still more, but this moderate success of the various air lines as passenger-carriers is as nothing to one really great triumph which has been scored by Civil Aviation over officialdom. For the first time His Majesty's Post Office has permitted aeroplanes to carry His Majesty's mails.

An Official Dictum.

It will be remembered that not many months ago, Mr. Illingworth, the Postmaster-General, treated a proposal to carry mails by aeroplane with scorn, alleging, apparently without any particular proof, that an aerial mail service was only about 60 per cent. efficient. Probably, Mr. Illingworth was basing his figures on the very primitive attempts made by the R.A.F. to run a mail service between London and Cologne not very long after the Armistice.

Everything was against the success of such a service. The best mechanics in the R.A.F. were being rapidly demobilised, the whole thing was run in the slipshod manner which unfortunately came to be associated with the R.A.F. before the process of demobilisation began to weed out the worst of the personnel, as well as some of the best, and the weather at that particular period was such as to make the worst of a bad job.

A Transatlantic Success.

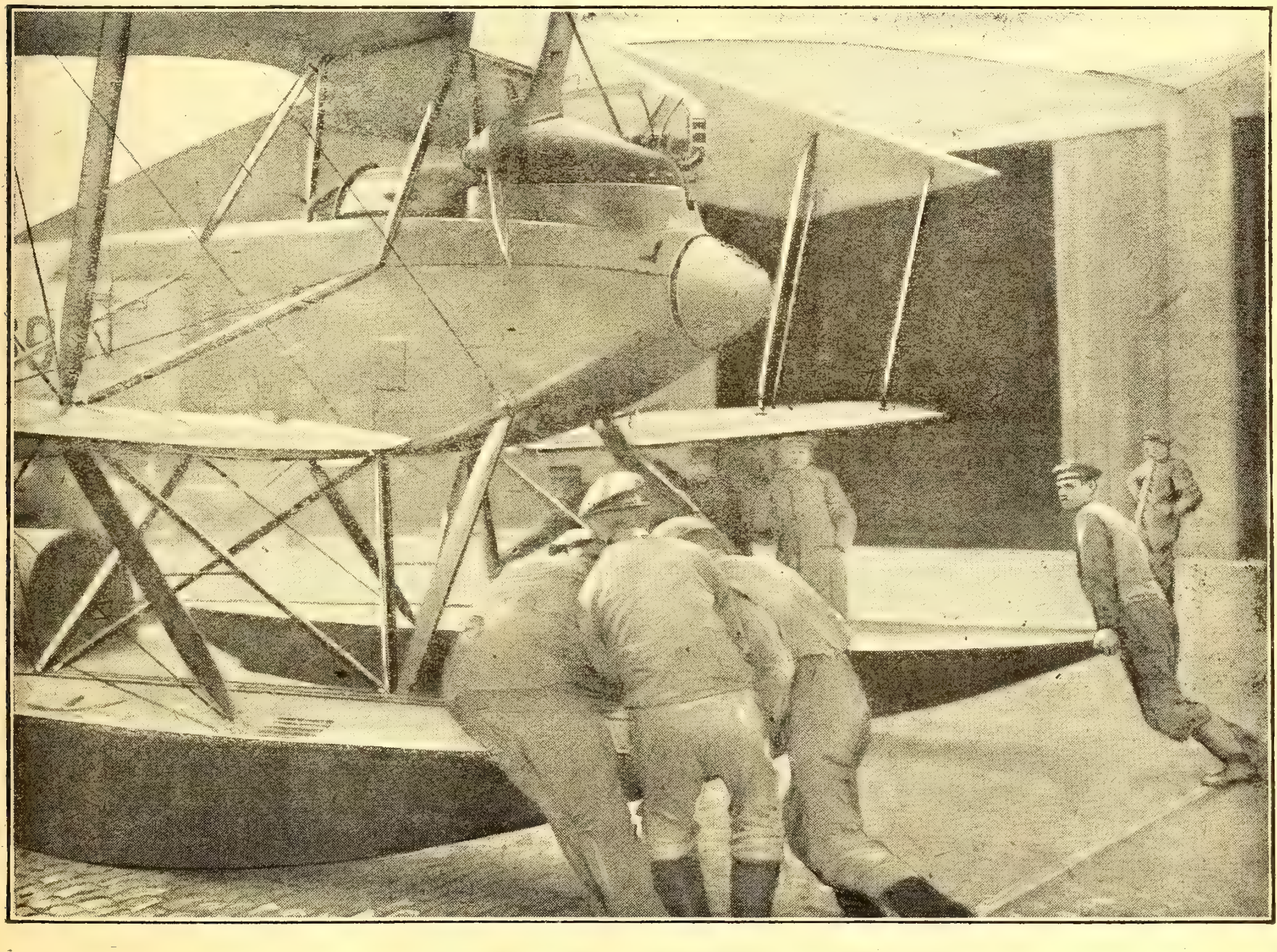
If Mr. Illingworth had taken the trouble to study the figures of the American mail services he would probably have held very different views. The first American experiment between New York and Washington was run with machines of a kind which even in America were called "elementary training machines," a type which, in fact, had been turned down in this country a year or two before as unsuitable for any kind of use. Yet, in spite of this, the percentage of successes was so good as to encourage the U.S. Post Office to extend the service.

After the Armistice quite reasonably effective aeroplanes were put into use, machines of a type which might possibly have been fit to use on active service. With these machines the percentage of efficiency became enormously high, so that when a few weeks ago the U.S. Postal Department published their figures for the first year of working, the efficiency was shown to be something over 95 per cent., and it was stated officially that the aeroplane service actually saved the nation 170,000 dollars (roughly, £34,000), as against the sum which would have been paid to the railways for carrying the same amount of mail matter.

Conditions of Competition.

This point is particularly worth noticing, because in America the aeroplane services between Washington, New York, Chicago, and Cleveland were competing with highly efficient railways running such crack trains as the "Empire State Express" and the "20th Century, Limited," and were not—as would be the case in England—competing with railways debilitated by Government control and manned by a personnel seething with discontent. Moreover, in America, the aeroplanes were competing with a straight-away railway run, whereas in this country the proposed mail services were to the Continent and to Ireland, so that the aeroplanes would have had the additional advantage of competing against slow steamboats and the delays of transhipment at each end of the sea journey.

If such successes could be achieved in America, how much more possible would it have been to achieve success in the mail services proposed in this country? Still, no amount of argument or proof is ever enough to move a British Govern-



Testing the Engine of a Seaplane at a German Station.

ment Department. Something in the nature of a social upheaval or a surgical operation is necessary to compel progress.

THE USES OF PRESSURE.

The necessary pressure has now been applied, and Mr. Illingworth—doubtless very much against his will—has been compelled to commit his precious mails to the despised aeroplane. It is only to be hoped that those responsible for the aeroplane mail service will make it a success, and that fortune will favour them with fine weather for the duration of the strike. Naturally, for one's own personal convenience, one would like to see the strike over at once, but from the point of view of the future of civil aviation it might be a good thing if the strike lasted for a few weeks, and at the moment of writing it appears quite probable that it will do so.

The railwaymen seem very determined to see the thing through, and those to whom one has spoken seem to feel that they have a very real grievance. Naturally the daily Press does not give the men's point of view. As one has remarked on several occasions, the daily Press of this country is either directly under the thumb of the Government or is under the thumb of somebody who does not want to fall out with the Government. Consequently practically every daily paper in existence reflects the Government point of view.

THE ALLEGED GRIEVANCE.

The real trouble with the railwaymen appears to be very simply and plainly that they do not trust the word of the Government. Nobody can particularly blame them for that attitude because practically everybody has at one time or another had cause to complain that the Government has not kept its word on some subject or another with which he or she is immediately concerned. The men say that the Government made certain definite promises that the whole matter of the pay of the different grades should be fixed by mutual agreement before the end of the year. On that understanding they returned to work after the last railway strike.

The men say that since they returned to work on that occasion the Government has done nothing, and that if they go on working the Government will go on doing nothing. Therefore, they allege that their only hope of getting a definite decision before the end of the year, when the war bonuses are removed, is to strike now. On the face of it this appears a reasonable argument, and if the men are wrong the Government ought to take proper steps to inform the men individually just where they are wrong and just what the Government has done in order to settle matters before the end of the year.

One cannot recall having seen anything in the Press since the last railway strike to indicate that the Government has done anything to settle matters, and presumably the average railwayman is in the same position as one is oneself. Therefore it appears that the Government is somewhat to blame for not keeping the men informed about the possibly excellent work which it has done in the direction of settling affairs by amicable arrangement.

Mr. J. H. Thomas, the great leader of the railwaymen, gave to the Press the other day a list of some of the anomalies which existed. He pointed out, for example, that a railway-shunter—a job which is one of the most dangerous in all our industries—gets 60s. a week, whereas a colliery-shunter working alongside him gets 70s. to 75s. a week. Also he pointed out that a railway guard, after years of service, gets 60s. a week, whereas a 'bus conductor after six months' work gets 73s. When one compares the responsibility of a railway-guard and the honesty of character necessary to handle the goods entrusted to his care, one begins to see that there are certain grievances which obviously must be redressed if the railwaymen are to give good and honest service. The fact that those anomalies have not been redressed ten months after the Armistice is certainly not to the credit of the Government.

When it comes to a plain statement of the facts on one side or the other we have the word of one Welshman, Mr. Lloyd George, against the word of another Welshman, Mr. J. H. Thomas, and one sees no reason to believe or disbelieve one any more than the other.

At any rate there is the strike and there are the aeroplanes. The various Civil Aerial Transport firms seem to be making the best of their opportunities, and whatever may be the result of the strike it is to be hoped that the work done by the aeroplanes in carrying mails, and those passengers whose business has made it worth their while to pay the high price at present necessary for aerial transport, will establish firmly in the minds of the business community and of Government Departments that the aeroplane is a vehicle which is worth using in ordinary times, and is not merely one upon which they may be compelled to rely in times of stress.—C. G. G.

AN R.A.F. MYSTERY.

There seems to be room in the Royal Air Force at the moment for a Sherlock Holmes of the very first class, and if any officer or man feels inclined to play the part of a private detective in his spare time one can suggest a line of search which is likely to keep him busy and amused at any rate during the period of a temporary commission.

It will be remembered that some time ago there appeared in this paper and others a short paragraph respecting the loss of early Squadron Record Books of the Royal Flying Corps. These books contained all the records of flying and other work done by the four aeroplane squadrons and one airship squadron of the Royal Flying Corps which existed before the outbreak of war, and naturally they are of immense historical value, as they date from the formation of the Royal Flying Corps in April, 1912, and contain all records up to the outbreak of war.

These Record Books disappeared in a most mysterious manner not very long ago, and anybody who can find any trace of them will be conferring a benefit not only on the Royal Air Force, but on aviation in general, for they are urgently needed by those who are at present engaged in writing the Official Air History of the War.

The story of the disappearance of these records is distinctly quaint. On the declaration of war orders were sent to the four officers commanding the four aeroplane squadrons then in being to forward all their records to R.F.C. Headquarters at South Farnborough. A Board of Inquiry which was held recently has obtained positive proof that these orders were faithfully fulfilled. The records were dispatched packed in wooden cases—generally Renault or Gnôme engine boxes—from No. 2 Squadron at Montrose and from Nos. 3 and 4 Squadrons at Netheravon. No. 5 Squadron was at Farnborough and the records had only to be sent to the Headquarters Office from the Squadron Office.

Naturally in the process of building up the R.F.C. a number of different officers were in command at H.Q., Farnborough, and nobody had any particular time to pay attention to the Squadron Records. These appear to have been housed in various places, owing to their original dumping-ground being needed for other purposes, but it is fairly well proved that they all existed at Farnborough so long as Farnborough remained H.Q., R.F.C.

Then when the Royal Air Force was formed and the great depot at Blandford came into being, the cases were sent off from Farnborough for the new Record Office. From that day to this no definite trace of them has been discovered, and there is no reliable evidence to show what became of them, except that a few isolated pages—evidently torn out of the Record Books—have come into the hands of the Historical Branch, R.A.F., which is engaged in writing the aforesaid official air history.

Everything points to these odd pages having come out of the books which were in the missing cases. It is quite possible that the cases may have been opened by some person or other who, not realising that the bundles of old books inside were of real historical value, merely threw them out onto the scrap heap. In that case possibly some of the men of the R.A.F. may have picked up odd volumes of the records and have kept them as souvenirs, not realising their value for historical purposes. Equally possibly the people who opened the cases may have thought that these early records of the R.F.C. would be interesting souvenirs of the Great War, but may not have appreciated their still greater value to the Officer in Charge of Records.

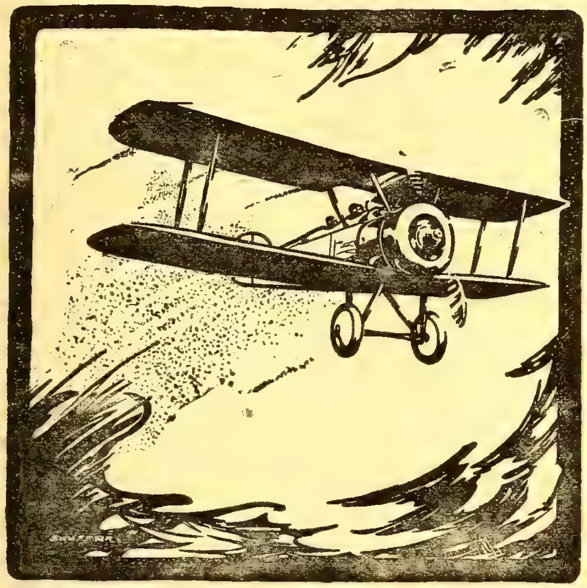
If any reader of this paper, whether officer or airman, can throw any light on the disappearance of these records he will be doing a service to everybody concerned with aviation if he will pass on any information which he may have on the subject to the Officer in Charge, Historical Branch, R.A.F., 2, Cavendish Square, W.1; and naturally, if anybody happens to have any of the books in his possession, he equally will be doing a service if he will send them along forthwith to the aforesaid officer.—C. G. G.

AN AIRCRAFT BED.

The promoters of the exhibition of models and pictures of aircraft which was opened at the Princes Galleries, Piccadilly, on Sept. 15th, hope that it will be the means of providing 10,000 shillings, clear of all expenses, to provide an airship bed at St. Dunstan's. The sum represents the total number of in-patients and out-patients treated at Lady Sybil Grant's Hospital at Roehampton during the war. It is hoped that all interested will send to their late Hospital Commandant something to be sold at the gift stall in the exhibition, or 1s. direct to Lady Sybil Grant, Primrose House, Roehampton, London, S.W.15.

CIVIL FLYING

WITH



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The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

A Professor of Aeronautics.

It is announced that Mr. Bennet Melville Jones, of Emmanuel College, Cambridge, has been elected to the "Francis Mond" Professorship of Aeronautical Engineering in Cambridge University.

It may be remembered that prior to 1913 Mr. Melville Jones was a member of the staff of the National Physical Laboratory engaged upon Aeronautical Research work, and that in that year he joined the staff of Sir W. G. Armstrong, Whitworth and Co. in connection with their Airship Department.

In September, 1914, Mr. Jones joined the Royal Aircraft Factory, remaining there till 1916, when he was transferred to Orfordness Armament Experimental Station, with the rank of Captain, R.F.C.

He later became Assistant Controller of Experiment and Research, with the rank of Lieut.-Colonel, R.A.F., having, in the meantime, served as a pilot with No. 48 Squadron in France.

The Case of Miss Douglas-Pennant.

Messrs. Simmons and Simmons, on behalf of Mr. W. C. Bersey, have lodged certain statements with regard to the case of Miss Douglas-Pennant before the House of Lords Committee in readiness for the hearing on Oct. 14th. Mr. Patrick Hastings, K.C., and Mr. Thomas Carthew have been retained on behalf of Mr. Bersey.

An American Competition.

The Aero Club of America has decided to offer prizes totalling one million dollars for an aerial race round the world.

Competitors will be permitted to use as many machines as they like in the race, and may use airships for all or any part of the course. In addition, they will be allowed to use any other means of transport for making connections between aircraft to the extent of 10 per cent. of the total distance to be covered. Alternative routes will be given to competitors for crossing the Atlantic and Pacific.

A special commission has been appointed to arrange the route and appoint referees in every country through which the competitors will pass. This commission will start during October.

The same scheme was mooted before the war, and this new edition is just as likely to be a success—or otherwise.

Another £10,000 Prize.

In order to commemorate the visit of the Prince of Wales to the capital of British Columbia and to encourage in Canada the development of aeronautics, Mr. Norman Yarrow, of Victoria, the head of Yarrows, Ltd., has offered a prize of £10,000 for the first non-stop flight across the Pacific Ocean from Vancouver Island to Japan.

The flight is to be made by a lighter-than-air machine which must be manufactured in Canada.

The airship is to be navigated and manned by Canadians. The flight must be a non-stop one and must be performed before December 31st, 1921.

Aeroplanes in the Antarctic.

Mr. John L. Cope, the leader and organiser of the British Imperial Antarctic Expedition, states that preparations are well advanced for the projected flight to the South Pole. He says that the death of Brig.-Gen. Lee had been a terrible blow. He had signed on with the expedition as chief of the aeronautical staff and would have piloted the aeroplane to the South Pole. Negotiations are now in progress with a famous aviator to take the place of General Lee.

Mr. Cope states that he is not merely going to fly to the Pole, but he intends to use the aeroplane throughout the six or seven years that the expedition will be on the ice. The Antarctic has never been charted properly, largely owing to the fact that many parts were quite inaccessible on foot.

It is his intention to chart the whole Antarctic from the air. He is glad to see that his old leader, Commander Shackleton, had expressed his views upon the prospects, and that he is in agreement with him regarding the practical use of the aeroplane. Of course, the machine itself would have to be of a very special type. In the first place, it would have to carry a very heavy load, four men and provisions for at least one month.

On the journey to the Pole they will have to cross a range of mountains which rises to 10,000 ft. Instead of wheels on the undercarriage there will be skids so that they can land on or rise from snow and ice.

Amongst the personnel of the expedition is Mr. Ernest Joyce, who accompanied the first Scott expedition to the South Pole, and was a member of both Shackleton expeditions. Mr. Joyce is now on his way to England from Sydney, and he has agreed to serve as second in command to Mr. Cope.

An Airship Enterprise.

According to reports in the daily Press, Vickers, Ltd., have decided to complete the R.80.

It may be remembered that this rigid airship was designed by Vickers, Ltd., for the Admiralty, under the limitations imposed by the fact that the new airship shed at Walney Island had to be abandoned owing to the shortage of steel.

The ship was therefore limited in overall dimensions by the capacity of their existing sheds, and thus R.80—although of later design—is consequently smaller than the R.33 and R.34 class.

Every effort has been made to overcome the handicap of size by careful design, and R.80 is expected to show a very great advance in the ratio of structure weight to total weight over all previous designs.

It is not clear from present information whether the completion of R.80 is to be carried out by Vickers as a private undertaking or whether the Air Ministry has been persuaded to assist in the process. It is in any case fairly certain that the impulse did not originate in the Air Ministry, and Vickers, Ltd., are to be congratulated on their enterprise.

Beware!

The following advertisement recently appeared in the daily Press:—

> PILOT WANTED for passenger flying; CAPITAL REQUIRED not less than £1,000; wage £5 p.w. and 3½ per cent. commission; should earn £8 to £10 p.w. Confidential.

Officers are warned to avoid investing their gratuities in concerns in which their salaries are liable to be paid from that same gratuity. One has no knowledge of the advertiser quoted, and the scheme may be unimpeachable, but the advertisement is of a type which has been used many times by flat-catchers.

Detectives in Aeroplanes.

According to the "Observer," the peaceful island of Capri, the delightful resort dear to so many English people, has had a little sensation all to itself. Apparently the Ministry of the Interior, from which depend the police, has not disdained to interest itself in the doings of the Siren Isle. As a result of some information, it instructed the Naples police to make inquiries about the existence of a gaming-house on Capri, where some of the visitors were in the habit of passing their evenings.

A Neapolitan detective, disguised as a tourist, crossed over to the island and began to make discreet inquiries in the public resorts, and in that world of free camaraderie which the morning bathing beach at Capri presents. He was not long in tracing the whereabouts of the gaming-house. But, fearing to alarm his prey by ordering a posse of police to come over in the daily boat from Naples, where they would have been too easily distinguishable, he telephoned to the mainland that a group of detectives should cross at night by aeroplane and land on some unfrequented part of the island.

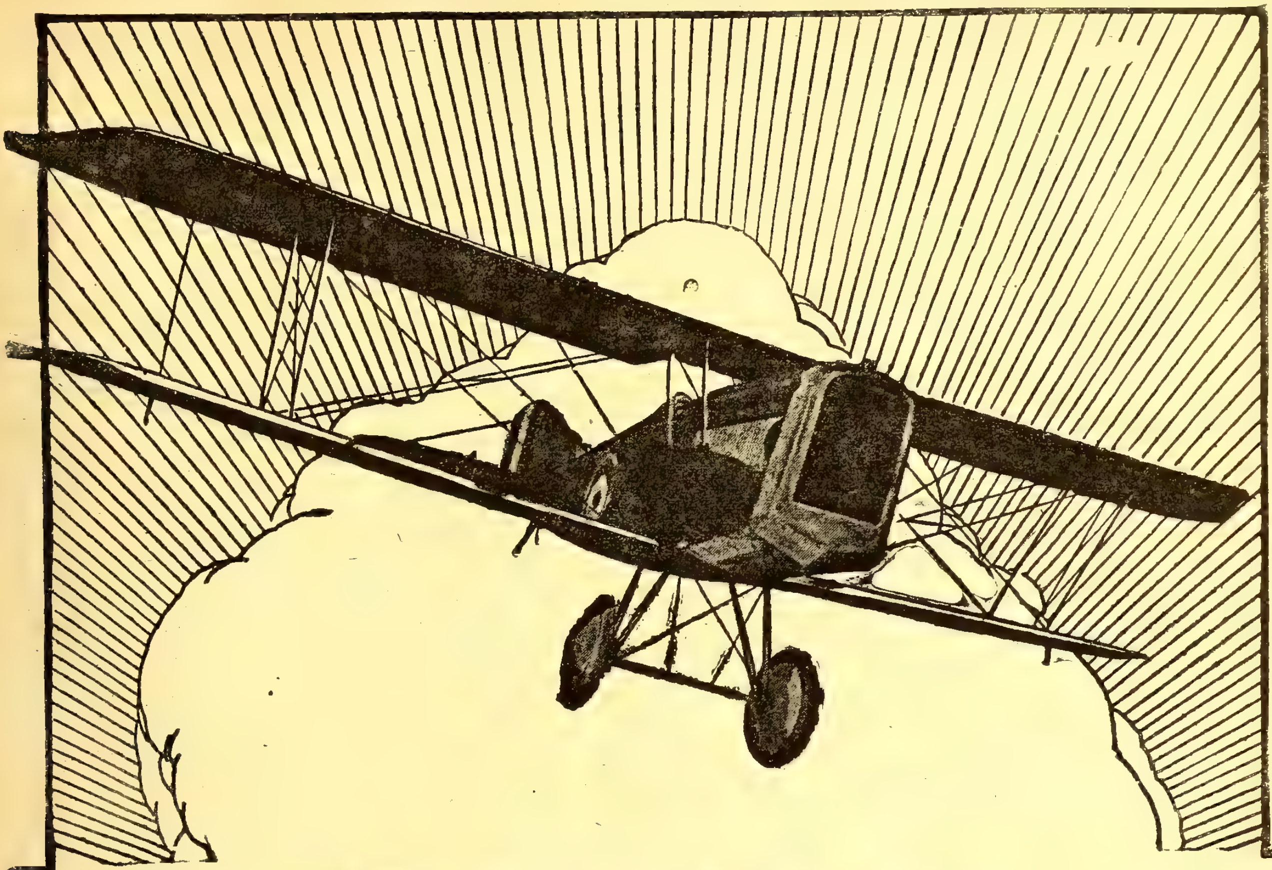
The aeroplane duly arrived with its complement of detectives. They marched to the gaming-house and effected the surprise, arresting a number of gamblers and closing the house, which—for the sake of truth—it must be admitted was being kept by an Englishman long resident in Capri. This is perhaps the first time that the police have arrived on the scene in an aeroplane.

Some Coming Dinners.

It is proposed to give a dinner on Oct. 3rd to all past and present officers of No. 1 Stores Depot, Royal Air Force, Kidbrooke, S.E.3. The dinner will be held in the Officers' Mess. Will any Officer who has not received an invitation, please communicate with P. M. C.?

A reunion dinner of the Officers of D Squadron, No. 2 Wing, R.N.A.S., will be held on Friday, Oct. 3rd, at the Restaurant Frascati. Applications for further particulars should be sent to Capt. J. A. Yonge, D.F.C., c/o The Eastbourne Aviation Co., Eastbourne.

It is proposed to hold a dinner at Princes Restaurant, Piccadilly, on October 10th, for the members of 208 Squadron. Will those wishing to attend please communicate with Lieut. H. A. Zinn, No. 208 Squadron, Netheravon, Wilts, as soon as possible, enclosing £2 10s.?



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DESIGNERS OF THE FAMOUS

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FINEST PERFORMANCE

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FROM LONDON TO PARIS

IN 75 MINUTES.

COMMERCIAL TYPE A.

INQUIRIES INVITED FOR PASSENGER—OR MAIL—CARRYING MACHINES OF THIS TYPE.
SPECIFICATIONS WILL INCLUDE

285 H.P. ROLLS-ROYCE FALCON ENGINE, or
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APPROXIMATE PRICE £2,500.

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The WORLD of AERONAUTICS (continued)

More Scandals.

R.A.F. scandals have—naturally enough—to move to the rear in the presence of a national railway strike.

This is a matter for some regret. One cannot, under the present circumstances, adequately deal with the overwhelming scandal of the effective suppression of the country's air forces just in time to prevent their taking a proper share in the reconstitution of national transport during the railway crisis.

There was one sage who remarked that a people obtained the Government they deserved, and one who remarked that the British Isles was inhabited by forty million people, "mostly fools." The writer fails to remember accurately whether these two sages were or were not one, but himself living somewhere in the vicinity of the Chelsea football ground he is firmly convinced that one was the yclept of Chelsea.

Whether the question be one of equation or identity matters little—Britain is certainly inhabited by several fools and governed by fewer but more foolish fools.

It is a little difficult to discover whether Britain at this moment is governed by Mr. Lloyd George in fear of the Northcliffe Press, or by Lord Northcliffe in fear of Mr. Lloyd George. Which, however, seems to matter little. Government of fools for fools by The fools undoubtedly sums up the present state of affairs with reasonable accuracy.

The "Times" and Mr. Lloyd George may be left to discuss the identity of the last-named party to the affair.

In the meantime an article which appeared in the "Times" of Sept. 27th may be adduced as evidence—circumstantial perhaps, but at least illuminative—to any who wish to inquire further into the question.

After a little wail—it certainly cannot be dignified by the Timely epithet of "thunder"—about thousands of young W.R.A.F. women—and others—who were daily conveyed from Reading to the Didcot stores of the R.A.F. by special train, it proceeds to an equally anæmic squeak on the subject of the tons of stores rotting at the Army Ordnance Stores at the latter place.

It is even stated that "a gentleman . . . was shocked" to see the waste going on.

It is, of course, unfortunate that gentlemen should be so easily shocked—it is more unfortunate that in all probability quite a large number of them will be even more shocked within the next few weeks—but it is even more regrettable that a paper with a world-wide reputation such as that once enjoyed by the "Times" should be able to combine in one and the same article an hysterical plea for the instant dismissal of Government servants employed upon the necessarily complex work of winding-up the war and a shriek about the waste resultant from a premature dispersal of an exactly similar staff, without any visible loss of prestige.

The article in question begins with a description of the arrival at Reading at 6.10 p.m. on Sept. 26th of a special train of fourteen or fifteen coaches laden with W.R.A.F.s from the R.A.F. Stores Depot at Didcot.

It moves on to state that "There are those, however, who feel that . . . the presence of so many girls in khaki and blue ten months after the signing of the Armistice is unwelcome to the local branch of the Comrades of the Great War—many of whom are still unemployed. . . .

"From what can be gathered in Reading the women are not at all anxious to be demobilised. The majority of them belong to the factory working-class and apparently they can earn more in uniform then they can do as civilians."

Thus it would appear that the real complaint is the not unusual one that the women had rather more horse-sense than the male members of the Comrades of the Great War, who failed to recognise this great truth. This in itself is a quite legitimate cause of complaint—no self-respecting man can properly tolerate such evidence of his incapacity.

However, it seems rather unwise on the part of the "Times" to publish in the same article the fact that valuable stores are rotting in the adjacent Ordnance Depot, particularly when it proceeds to state that at that depot hundreds of men—mainly discharged soldiers—are employed at the latter establishment, together with a comparatively small staff of men of the Army Ordnance Stores.

It may be safely assumed that there is no such obvious evidence of waste at the R.A.F. Depot or the scandal-monger of the "Times" would have mentioned it. It must therefore be assumed that the "Times" desires the R.A.F. Stores to assume the aspect of the Ordnance Stores. It may thus secure both the goodwill of the Comrades of the Great War and a further Didcot scandal about which to yowl.

But, speaking purely from an editorial point of view, one would certainly advise the "Times" to sack whoever was responsible for combining the two stories. Had they been well separated they might have passed—but, really, it is too easy. After all, a bad editor is a more serious matter than a weak policy—and this looks like a combine.

A Rumour.

It is rumoured that Vickers Ltd. have received orders for a semi-rigid airship for Japan and a rigid airship for the United States of America. It is extremely comforting to hear that at least somebody realises the importance of lighter-than-air craft, but it would certainly sound more comforting if these orders had been given by the British Government. Anyway, these present orders will certainly keep in employment a large amount of skilled British labour for such a time when our authorities recover from their orgy of false economy.

The Aeroplane of the Future.

In an interview given to a representative of the "Evening News" Mr. Handley Page is reported to have said that there are many problems to be solved before anything is to be gained by building really gigantic machines.

"One has only to look at the history of the motor-car," he said. "We started with a 6 h.p. car carrying four and five passengers, and running the engine to its utmost capacity, and by stages we got on to the 100 h.p. racer.

"But time has proved that for efficient working the car of about 20 h.p. is the most practicable. It will be exactly the same with aeroplanes.

"We shall get the freak machines, but I feel convinced that the moderate-sized craft for about eight or ten passengers is what is wanted for commercial work.

" Mr. Fokker's fighting aeroplane of the future is far more feasible."

"The only speed limit to an aeroplane is your pocket-book, and the increasing development of wireless makes it highly probable that the big bombers will be controlled from the ground.

"The vision of aeroplanes screeching through the air at anything up to 300 miles an hour, big guns as old-fashioned as spears, and infantry as mere passive armies of occupation, is something for the League of Nations to see about."

A National Effort.

Were the British Industries Fair, which is to be held from Feb. 23rd to March 5th, 1920, a private enterprise, it would still be entirely worthy of support; but being, as it is, a National effort, it is, undoubtedly, the duty of both manufacturers and Press, to leave no stone unturned to help forward its success. It is understood that the Board of Trade are sending out over 100,000 invitations to buyers at home and abroad, which, of course, is all to the good; but, if we, as a nation—for that is what it amounts to—invite such a congregation of buyers to attend a Trade Fair, it is up to us, also as a nation, and individually, too, to see that the exhibits we are calling them to view and, in every trade effected, fully represented.

Speaking for a moment of one section of the Fair—that of Birmingham—it is stated that the management are making strenuous efforts to avoid any weakness in this direction, and that one of their greatest handicaps is the apparent inability among potential exhibitors to realise the actual position. In Birmingham, the Chamber of Commerce and Municipality are jointly responsible for the organisation of this section of the Fair, and one willingly supports their efforts to spread, far and wide, the knowledge that this is a national affair, which knowledge alone will prevent that unrepresentativeness of the various grouped exhibits which will eventuate if all the leading concerns in each Industry do not place their products on view in either one or other of the three centres over which the Fair is divided—London, Birmingham, and Glasgow.

In short, if the British Industries Fair is to impress the buyers of the world with the wide range of our manufacturers' activities and the high standard of their products—if, in fact, it is to serve its purpose fully—there must be no hesitation among possible exhibitors, and there truly should be none among those who think nationally and not parochially.

Foolish Questions.

The booking agent of a well-known passenger air line has sent to the American "Aircraft Journal" the following samples of questions asked by prospective passengers :

"If I take my dog with me, do you think he will get sick?"

"Must I take Motherill's seasick remedy before I go up?"

"Can I step off to see a friend on the way down?"

"If I get killed do you have to go to prison?"

"Are your pilots blonde or brunette? I read in an article that only blonde pilots made good overseas."

"What happens if your engine stalls while we are in the air?"

" Will you promise not to fly too high? "

"How often have you been hurt?"

"Supposing I change my mind at the last moment, do I have to pay?"

The First Milestone in Post War Lamp Production

IMPORTANT REDUCTION IN PRICES

On and after October 1st, 1919, the prices of

Osram G.E.C. Lamps *Atmos type*

will be reduced as follows:—

Rating in Watts.	REDUCED	
	From	To
15 . .	4 6	4 3
30 . .	5 6	5 0
60 . .	6 6	5 6
100 . .	12 6	10 6
150 . .	16 6	13 6
200 . .	20 0	16 0
300 L.V. .	25 0	20 0
300 H.V. .	30 0	20 0
500 . .	30 0	24 0
1000 . .	40 0	30 0
1500 . .	50 0	37 6

The above substantial reductions have been rendered possible through further technical progress resulting in improved manufacturing methods, combined with considerably increased output.
In pursuance of a pre-war policy the benefit thereof is at once offered to the user.

OBTAINABLE FROM ALL LEADING ELECTRICIANS, IRONMONGERS & STORES.

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BRANCHES THROUGHOUT THE UNITED KINGDOM.

NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointment has been made :—
SEPT. 25th.—Payr. Mid.—H. C. Hobson, to "Argus," Sept. 24th.

MILITARY.

OFFICIAL COMMUNIQUES.

The following official communiqué was issued at Simla on Sept. 22nd : Raiders on the 19th inst. attacked the Zarkani post. An aerial reconnaissance was made on the 20th, but nothing was seen of the enemy.

* * *

THE CASUALTY LIST.

... ... *Reported Sept. 30th.*

PREVIOUSLY REPORTED MISSING, NOW REPORTED KILLED.—Muir, Sec. Lt. J. W., R.F.C.

A PROMOTION.

Lieut.-General Sir David Henderson has been promoted by M. Poincaré to the rank of Grand Officer of the Legion of Honour.

AIR FORCE.

THE BOMBING OF KRONSTADT.

British aviators are still bombing Kronstadt. It is now reported that from 140,000 lb. to 180,000 lb. of bombs have been dropped on the fortress.

A FATAL ACCIDENT.

On Sept. 28th a British aeroplane, while taking off in the neighbourhood of Lake Bracciano collided with a tree and caught fire. The pilot, Capt. C. H. Darley, D.S.C., D.F.C., R.A.F., was killed, and the observer, Lieut. Curtis, R.A.F., was injured; a mechanic who formed part of the crew was unhurt. The machine was on its way from London to Cairo.

AN ACCIDENT IN ITALY.

On Sept. 23rd the petrol tank of an R.A.F. motor launch lying off Poole exploded and the vessel caught fire In spite of the efforts of the crew, the launch was burned to the water's edge, and four men were badly injured.

The names of the airmen are :—Serjeant Thomas Bunting, and Leslie Boorman, David Spence, and William Rumbler.

BRITISH AIRCRAFT AT ST. RAPHAEL.

Three British aeroplanes said to be of the Vickers "Vimy" type left St. Raphael recently. One of these machines is stated to have made the journey from Lyon to St Raphael in 2 hours 30 minutes.

THE OLYMPIC GAMES.

A meeting of the British Olympic Council was held on Sept. 23rd in connection with the revival of the Olympic Games at Antwerp next year. The R.A.F. was represented by Major Clarke, Chief Inspector of Gymnasia, R.A.F.

THE W.R.A.F.

It is, more or less officially, stated that the strength of the W.R.A.F. has fallen to 13,345 since the Armistice. Before that date the strength was 25,600. The Force is to be still further reduced, namely, to 3,298, immediately, and it is hoped that the remainder will be demobilised by April 1st, 1920. The entire disbandment is necessitated by the reduction of the Air Estimates from £66,500,000 to £25,000,000.

R.A.F. PAY.

The following letter has been received :—

Sir,—In your issue of July 23rd, you publish with little or no comment the long-awaited and eagerly expected new rates of pay for Officers of the Royal Air Force. It appears to me that there are two points about these new rates which are open to some criticism, and to which more attention might be drawn.

The first is that no additional Flying Pay of any sort (whether in the form of "risk pay" or otherwise) is allowed.

The second (and it really arises from the first) is that from a comparative point of view the rates of pay are unexpectedly low as far as Officers—and particularly Officers of higher ranks—of the late flying branch are concerned.

As regards the first point, we know that in the ideal Air Service all Officers of all ranks, and whatever their other specific duties, will all fly equally; and there is no doubt that it is the desire and intention of the present Air Council to form such a Service.

I am inclined to think, however, that in this imperfect world such an ideal Service will never be realised, and that it will be found again (as it has been in the past) that office work and flying will not go hand-in-hand.

A pilot who is employed for any length of time on an administrative job either hates his job or loses interest in his flying. As there will always be so many administrative jobs to be filled, and probably also so many ex-pilots ready and willing to fill them, why try to adopt the most difficult course of expecting all Officers to fly, whatever their work ?

Another reason against the scheme is that it closes one of the few possible openings for the continued employment in the Service of ex-pilots, and brings these Officers even more up against a blank wall should their nerve give out, or they have to discontinue flying for any other reason.

All things considered, I think that if Officers are to be attracted to fly and to continue flying, it will again be found necessary before very long to make some differentiation between flying and non-flying jobs, and either to reduce the pay of non-flying jobs (which would probably not be possible), or to re-introduce in some form or other a system of "flying pay for flying risks."

As regards my second point, comparison of the new rates of pay with the old will show that the new pay has been fixed at a rate very little higher in the junior ranks and not at all higher in the senior than the old scale of flying pay.

Thus, a Captain "flying" gets a rise of 4s. a day, a Major 2s. (or only one shilling if he is an ex-R.F.C. or R.N.A.S. Squadron Commander), and a Lieut.-Colonel no rise at all. In all cases, of course, the bonus which has been paid since Feb. 1st this year is dropped altogether.

Many people will say, and most others will, no doubt, agree, that a Lieut.-Colonel, R.A.F., or Wing Commander, R.F.C., or R.N.A.S., was grossly overpaid in the past. This may or may not be; but the fact remains that since 1914 his rate of pay has been 40s. a day, and it is probable that his expenditure bore a fairly close relation to his income. Similarly, a Major, R.F.C., or Squadron Commander, R.N.A.S., has drawn 33s. a day since the same date. Now, after some five years with all prices doubled and all the world talking of or demanding (and getting) higher wages and increases of pay all round, the Lieut.-Colonel gets no increase at all, and is 5s. 6d. down on the pay he has been drawing since February this year, while the Major gets a rise of 1s. or 2s., and, at the same time, loses the 5s. he has also been getting since February.

To put the matter in even a worse light.

Presuming that the rates of 33s. and 40s. were fixed before the war with due regards to the duties and responsibilities of the ranks (which, as mentioned above, many people will, no doubt, deny), and taking the favourite economic argument of Labour leaders, that £1 has only the purchasing-value of 10s. before the war, it will be seen that the £730 per annum which a Lieut.-Colonel drew before the war is now only worth £365 per annum, and yet he is to get no increase.

Not only that, but next year, when all Officers come on to the civilian rates of income-tax, the unfortunate Majors and Lieut.-Colonels (if still in the Service, which is questionable) will lose heavily, even on the face value of new rates as compared to the old.

This seems to me to be entirely wrong; but as the Officers concerned form so small a proportion of the whole, they will, no doubt,, get neither sympathy nor redress—in fact, they will probably be told that they are lucky to be allowed to retain the vast rates of pay that they have undeservedly been getting in the past!

All the same, it is a little hard for any Officer, of whatever rank, to find that the much-heralded increase of pay which he had been led to expect turns out to be for him, personally, such a very "Dutch" rise, resulting in an actual dead loss!

Incidentally, it is interesting to note that the new R.A.F. rates correspond very closely with the new Naval rates.

Presumably, the new Army rates will also be on similar lines, which means, I suppose, that in the opinion of the powers that be the Air Force is no longer a Service of special

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danger. This should, at least, be a good advertisement for the safety of flying!

Yet Naval Officers in submarines still get 4s. a day "risk pay."

Also, a Commander, R.N., draws extra "Command Pay," in addition to his 40s. a day if in command of a ship. By the same reasoning, why should not a Lieut.-Colonel, R.A.F., get "Command Pay," in addition to his £2 when in command of a Wing or Station?

(Signed) MAJOR, R.A.F.

AIRSHIP COMMISSIONS.

The "Evening News" (of Sept. 25th) understands that "the number of permanent commissions to be granted in the Airship Branch of the R.A.F. has been fixed at 30, against the 6,000 granted during the war and 150 in pre-war days."

[One doubts if there was anything like one hundred and fifty airship commissions in pre-war days.—ED.]

FRANCE.

A scheme is under consideration by the military authorities by which demobilised military aviators will be given the opportunity of keeping in touch with flying in general. Two solutions are suggested:—(1) to fix regular periods in which aviators can report for training, etc., and (2) to place at aerodromes near various centres a certain number of military aeroplanes at the disposal of aviators living in the district.

FRENCH AIRSHIP CONSTRUCTION.

At the recent reception given to M. Bossontrot on his return from Dakar by the French Aero Club, General Duval stated that France had given an order for the construction of six rigid airships of 70,000 cubic metres capacity.

A CONVICTED GERMAN AVIATOR.

Heinrich Frey, a German aviator, has been convicted by court-martial at Amiens of a series of thefts at Soissons and has been sentenced to ten years' hard labour, twenty years' exclusion from France and a fine of 5,000 francs.

THE FIRE AT LE BOURGET.

A serious fire occurred at Le Bourget Aerodrome, near Paris, on Sept. 25th. Soldiers and firemen from Paris contrived rapidly to extinguish the flames. The Le Bourget Aerodrome is the French terminus of the London-Paris Air Service; luckily no stoppage was caused to that service by the fire.

The fire occurred in the Réserve Générale Aeronautique and destroyed a wooden workshop, several machine tools, six motor-cars and three reconstructed aeroplanes. The total damage is estimated to cost 800,000 francs.

ITALY.

THE ITALIAN SEAPLANE SQUADRON AT E.L.T.A.

It appears that, by the efforts of Nav. Capt. Gravino, attaché at the Stockholm embassy of H.M. the King of Italy, the seaplane squadron now at the E.L.T.A. Show, when it leaves, will fly on to Sweden, for commercial propaganda.—T. S. H.

GERMANY.

A BANK-BREAKING VENTURE.

Mr. H. Patrick Devitte, the "Daily Express" correspondent in Geneva, writes on Sept. 27th:—

The Rumanian Bureau at Berne informs me that Rumanian troops yesterday seized a great German biplane with four motors, which was forced to descend at Hotin, in Bessarabia, owing to a leakage in the petrol tank. The biplane contained 300,000,000 roubles (nominally £30,000,000) in new notes, also a complete miniature printing press for the manufacture of notes.

Four German officers who were in the aeroplane were flying to Moscow. They were arrested, and the biplane, notes, and press were seized. This incident proves the relations existing between Berlin and Moscow.

[It seems more likely that the intention was to flood Russia with bogus Bolshevik notes and so help to break the finances of the Bolshevik tyranny.—ED.]

U.S.A.

It is now announced that recruiting for the U.S. Army Air Service has been discontinued according to the instructions of the War Department. This Service has been decreased by 91 per cent. since the Armistice. The following figures of comparison are given:—

Of 195,023 officers and men in the service on Nov. 11th, 1918, but 16,991 remain, of whom 3,426 are officers. Of the 15,646 commissioned officers discharged, 1,638 flying and 1,524 non-flying have entered the Reserve, 20 per cent. of the number discharged.

Since April 1st, 10,000 hours not chargeable to training have been flown at the United States Flying Fields, with 37 fatalities. This shows a high fatality rate of 269 hr. per fatality as compared with 3,149 hr. per fatality for all flying during the last five months of the war.

A CROSS-COUNTRY FLIGHT.

According to the "Aircraft Journal" of America:—

"More than two and a quarter miles a minute is the speed record made by Lieut. Lyman Paterson, of the United States Army, flying from Washington to Langley Field. The 160 miles distance was covered in 70 min., according to an announcement made by the Air Service. It is pointed out that by maintaining this speed it would be possible to cross the Atlantic in considerably less than 24 hours."

One agrees that at this speed the Atlantic could be crossed in "considerably less" than 24 hours.

"ALL THINGS BRIGHT AND BEAUTIFUL": A Group of Aviators of the U.S. Naval Air Service. It is alleged that each of them is the son of a millionaire.

London-Paris Air Express

Summary of First Five Weeks' Flying.

August 25th, 1919, to September 27th, 1919.

Flights Scheduled	69
Flights accomplished	66
Prevented by weather . . .	2
Interrupted by mechanical defect	1
Number of Miles flown . .	16,500
Average Speed (Miles per hour) .	107

The following is an official summary of the weather flown through during the first five weeks.

Days favourable for flying	3
„ unfavourable for flying . . .	18
„ noted officially as "unfit" for flying .	9

The attention of Bankers, Merchants, and firms which have houses both in London and Paris is again drawn to the unique facilities afforded by this service, which permits urgent documents, express goods, or passengers to be transported the 250 miles between London and Paris in an average time of 2¼ hours. The service, which has been operating daily since August 25th, has been started in order to demonstrate that, with the use of skilled pilots and fast machines, such an express air service can now be run with sufficient reliability to afford a definite, daily convenience to the business world.

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
27, Buckingham Gate, S.W.1.

Full particulars regarding Rates and Freights can be obtained from Aircraft Transport & Travel, Ltd., 27, Buckingham Gate, S.W.1, or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C. and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street and Beak Street, W.; Lepaerial Travel, Piccadilly Circus (Criterion corner); Carter, Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; and Hernu, Peron & Co., 98-100, Queen Victoria St., E.C.

PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysees.

THE ROYAL AERONAUTICAL SOCIETY IN SCOTLAND.

On Sept. 24th, at Glasgow, the Scottish branch of the Royal Aeronautical Society entertained to luncheon the officers and crew of the Clyde-built airship, "R.34." Sir William Beardmore, whose firm built the airship, presided, and was supported by Lord Blythswood and others.

Sir Robert Horne, Minister of Labour, proposed the toast of the day, and said that Britain had beaten the Germans in the airship, which was our special pride, and the nation was under a debt of gratitude to her intrepid crew.

Major Scott, the commander, acknowledging, said civilian-owned airships would, for a long time, go along the lines of the designs of naval and military craft. Any support civilian owners got from the Government would be of the utmost national importance, because, in a few days, civilian airships could be converted to war craft.

The Marquis of Graham, replying to the toast of "The Builders," said the outlook for the development of commercial aviation was illimitable.

Sir William Ramsay, speaking of the Society, said the aeroplane constructed five years ago was still the most suitable, the most steady, and the safest machine heavier than air. This was the type of machine which had to be developed, and not the light, swift machine, which could do wonderful stunts and paralyse an opponent in actual fighting.

In the evening a public welcome was accorded the crew in St. Andrew's Hall, Glasgow, when amongst the speakers were Sir William Beardmore, chairman, and Sir Robert Horne. Lord Weir, who had been suddenly called to London, was to deliver an address, which, however, was read in his absence.

THE KING'S CONGRATULATION.

King George sent the following telegram :—

The King has received with much pleasure and satisfaction the loyal message from the citizens of Glasgow assembled this evening at the invitation of the Scottish branch of the Royal Aeronautical Society to do honour to the first British airship to cross and recross the Atlantic, and, thanking them for their assurance, His Majesty heartily joins in congratulating the designer and all those associated with the construction of this airship, on the remarkable success it has achieved, and is glad to think that the Clyde has played so prominent a part in establishing this fine record in the annals of British history. The King much appreciates the kind allusions to Prince Albert.

PROGRESS IN RESEARCH WORK.

Lord Weir, in his paper, which was read by his brother, said the chief deduction he drew for the future was the one which the war made perfectly clear—namely, the supreme necessity of the strictest vigilance in the development of research and experiment. Whatever influence the exigencies of the moment might exercise on retrenchment, there must be no reduction of our expenditure on technical development. War was the compelling influence of the intensification of our technical effort.

Referring to the immediate future of civil or commercial aviation, his lordship confessed he was a genuine believer in the future of civil aviation. He accepted flying seriously as an ultimately invaluable system of achieving high-speed transport for goods and passengers. He had an unflinching faith that aircraft comprising heavier-than-air or lighter-than-air craft would ultimately confer a genuine boon on civilisation. Early progress in civil aviation would, to the uninitiated, appear slow and unsatisfactory.

An aerial transport company to-day was like a merchant shipping concern without ports or harbours. Regarding commercial aviation, he thought only of the practical and utilitarian aspect of regular services, carrying goods and passengers. He fully recognised the immediate development and wholly admirable and profitable small ventures which would take place in the application of aircraft. For example, he looked to a considerable development on the sporting side and in the personal use of aeroplanes by the not inconsiderable number of those who were pilots during the war. For photographic and survey work a definite field of enterprise and usefulness was open.

AERIAL MAIL SERVICE.

An increase in the rapidity of communication and of transport would be one of the most definite aids to the progress of civilisation. Mail matter would represent the most favourable class of work as a source of revenue. Thereafter would come urgent and emergency passenger work, e.g., the carriage of goods of a light, valuable, and specialised nature. The vagaries of our climate and the highly developed and speedy existing mail transport rendered the immediate application of aerial mail-carrying in the United Kingdom improbable.

After referring to the performances of the new London to Paris service, his Lordship said they must also realise the tremendous usefulness and value of obtaining actual experience on a more ambitious scale as early as possible. With that in view, one visualised the problem of handling, say, a part of the Indian mail over the section of the route where weather conditions are favourable and uniform at an early date.

If that route were started from Egypt to Karachi, that would constitute the initiation of a chain of Imperial air routes connecting by trunk lines the main units of the British Empire, and they would foresee, in addition, auxiliary feeder lines to and from the smaller centres. There were also many independent services. The most favourable he considered to be the coastal work service in Australia and the West Indies. At present he had the greatest faith in the usefulness of the coastal sort of flying-boat.

THE MILITARY ASPECT.

As regards Imperial air routes and civil aviation, there entered into the problem the important factor of the future military aerial activities of the Empire. Whatever sum might be apportioned for the defence of the Empire would be allocated between air, sea, and land power, and it was clear that air power was the developing factor of the three. Accordingly, for strategical reasons alone, the different units of the Empire would require to be linked up by definite aerial routes, which would be found to a great extent to coincide with the commercial routes.

As to the State's part, he repeated that the best ends of civilisation would not be served by keeping civil aviation for a Government monopoly. Co-operation between the activities of the State and of private firms would produce the best results. The State must be the pioneer. It must help to build, encourage, and exercise control, but emphatically it must not monopolise.

BRITISH SUPERIORITY.

The "Times" of Sept. 20th referred to the success of the British-made aeroplanes at the E.L.T.A. as follows :—

"Mr. Kenworthy, better known during the war as Commander Kenworthy, states that shortly after the exhibition opened he found the Dutch were mad on the Fokker. The British, however, were not slow in changing this, for a few days after English airmen had been in the air the Fokker was not in the picture. From the first there was absolutely no doubt as to the superiority of the British machine over that of the Fokker type. Without presuming in the least, he could say they beat the lot.

"Mr. Kenworthy, who flew a Kangaroo machine made by the Blackburn Aeroplane Company, said he took eight passengers with him on many flights. When they were coming home they flew in a thick fog at Calais. When halfway across the Channel he and Capt. Woolley, who accompanied him, had something of a scare, for they discovered they had only sufficient petrol to last for another 10 minutes. The fog still surrounded them, and the wind was against them, so they decided to turn back. Top speed had to be resorted to and he calculated that they flew back to Marquise at a speed of 150 miles an hour, for in five minutes they landed. Before they left Amsterdam he and other English pilots received an invitation to meet M. Fokker at dinner, but, added Mr. Kenworthy, 'we refused the invitation.' "

[But for the fact that Mr. Kenworthy was never known as "Commander"—never having held that rank—the "Times" statement is instructive and amusing.—ED.]

NO TRESPASSING.

Perhaps the first "No Trespassing" sign intended as a warning to aviators has been seen by Mr. G. F. Scales, president of the Miller-Scales Aero Co., of Waterloo, Iowa. The notice read :—

KEEP OFF THIS
FARM WITH AIROPLAIN.
NO TRESPASSING ALLOWED.

The owner of the farm had not actions for damages in his mind, for in attempting to settle with him for a landing the farmer insisted that he had all the money he needed, and that his livestock did not care to mingle with aircraft, to which they were not accustomed.

The "Aircraft Journal" of America" remarks : That this question will come up again can hardly be doubted, for court action has already been brought which will determine whether a property owner is also owner of the air above his land. Frederick Hoenemann, a farmer near Kansas City, Mo., is seeking to restrain an aeroplane company from using the air above his farm.

ROLLS
ROYCE

THE FUTURE OF FLYING DEPENDS
ON **TRUSTWORTHINESS.**

¶ WHEN TRUSTWORTHINESS IS NECESSARY, **ROLLS-ROYCE AERO-ENGINES** ARE USED TO ENSURE SUCCESS.

¶ **ATLANTIC FLIGHT.** THE FIRST AND ONLY DIRECT FLIGHT ACROSS THE ATLANTIC WAS MADE BY VICKERS-VIMY-ROLLS WITH **ROLLS-ROYCE ENGINES.**

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¶ **2,450 MILES FLIGHT TO SCANDINAVIA.** GOVERNMENT DEMONSTRATION FLIGHT JUST COMPLETED IN F5 FLYING BOAT. 2,450 SEA MILES—FELIXSTOWE TO SCANDINAVIA AND BACK—MADE WITH **ROLLS-ROYCE ENGINES.**

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BRITISH RECORD.

The Royal Aero Club has informed D. Napier & Sons, Ltd., that the speed attained by Captain Gathergood when he won the Aerial Derby with a 450 h.p. Napier "Airco" machine on July 21st has been accepted as a British Record for a closed circuit; the speed on that occasion was 129.3 miles per hour.

The magnetos used on the above-mentioned aeroplane were B.T.H. type AC.12s.

The British Thomson-Houston Co., Ltd.,
Lower Ford Street, Coventry, England.
Member of the British Ignition Apparatus Association.

Motoring Reconstruction.

Big Results of the A.A.'s "Peace Push."

Immediately the Armistice was signed, the Automobile Association settled down to the task of restoring touring conditions to their pre-war standard. As its five hundred civilian soldiers were demobilised they resumed their old positions and helped to train the new blood which replaced those who had fallen in the war.

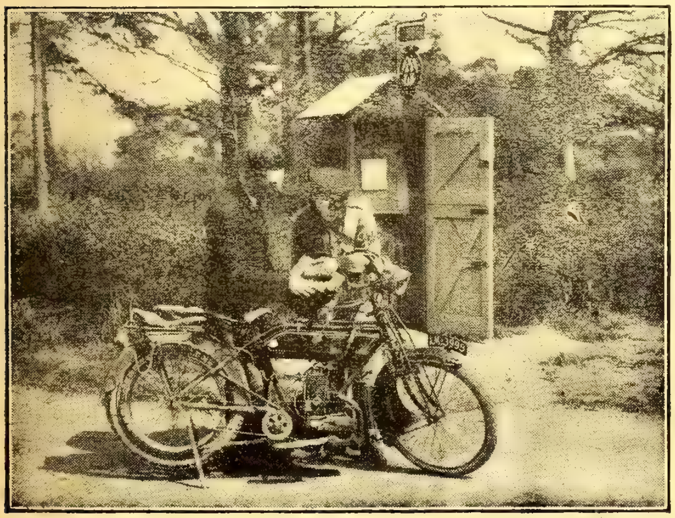
When one remembers touring conditions during 1915/18 and contrasts the position with that of to-day, the success of the A.A.'s endeavours is easily seen.

The Khaki-clad A.A. Patrols are again on all the main roads, directing traffic, undertaking roadside adjustments, obtaining replacements, giving members road information and warning them of highway dangers. "Mechanical First-Aid" Cycles for light repairs to members' cars or motor cycles have been added to the patrol organisation.

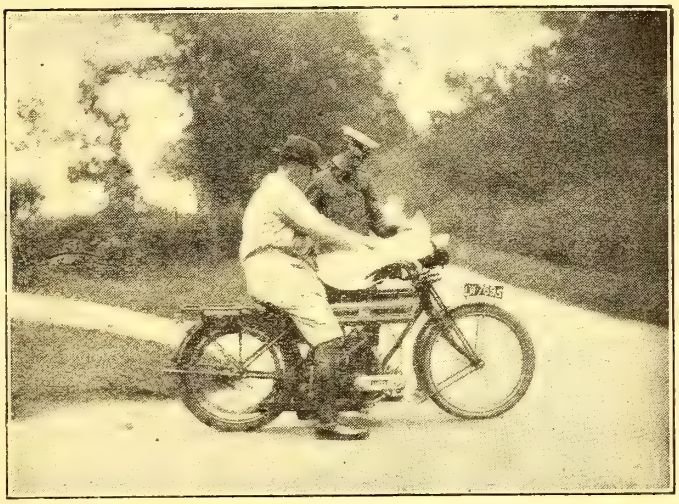
Roadside Telephone Boxes have been re-opened, the number of instruments has been increased and the service is being extended so as to be available to every member at any hour of the day or night.

Agents and Repairers have been appointed on twenty thousand miles of main road in the United Kingdom. In every case an official of the Association inspects the premises and facilities before an appointment is made.

A.A. Hotels have been re-inspected by a specially trained staff. The hotels have been classified on a "star" basis and the list is constantly being added to and revised.



Touring Facilities are again available and the Association provides all possible assistance to members touring with their cars, light cars, or motor cycles in Great Britain and Ireland.



Foreign Touring Assistance has been augmented so that members are now able to take their cars abroad without having to deposit cash in respect of Customs dues.

Free Legal Defence is afforded to every member in any proceedings, arising out of the ownership or use of privately owned motor vehicles, instituted under the Motor Car Act. This benefit has now been greatly extended and covers Free Legal Representation by the Association's solicitors in civil cases.

Other privileges of A.A. membership include Free Legal Advice, Special Insurance Facilities, Engineering Assistance, etc., etc.

Full particulars of all these benefits are contained in the booklet "The Key to the Open Road," a copy of which can be obtained, post free, from the Secretary, The Automobile Association, 41, Fanum House, Whitcomb Street, London, W.C.2. Send a postcard to-day. Motorists in London who wish to join the Association without delay are invited to call at Headquarters, where a staff of experts is always in attendance ready to give information on any question relating to motoring.

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CONTRACTORS to the AIR MINISTRY.

JUPITER	(Ungeared)	450 H.P.,	636 lbs.	Weight.
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LUCIFER	-	100 H.P.,	280 lbs.	Weight.

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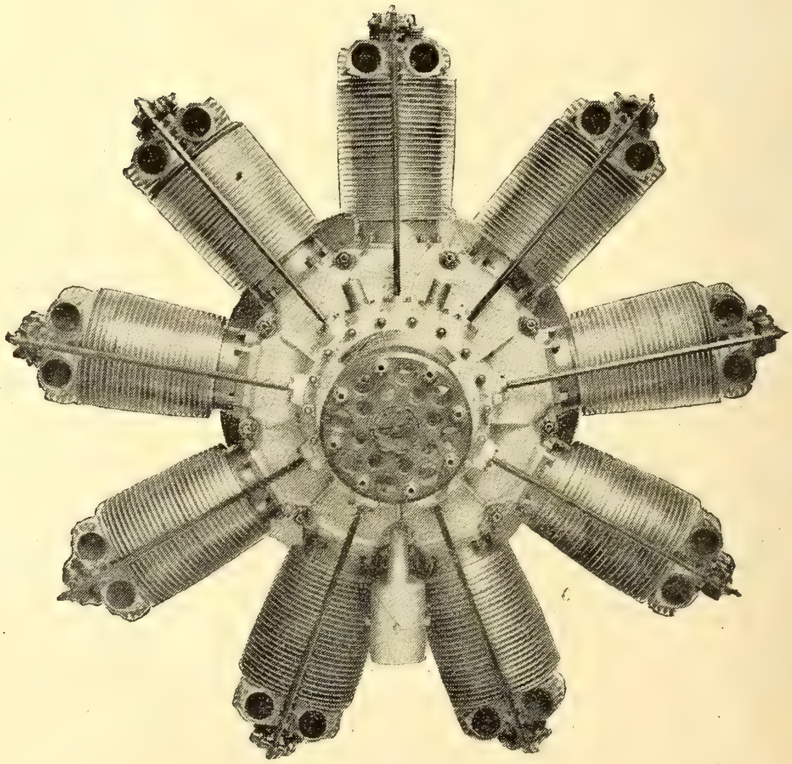


450 H.P. JUPITER.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

A paper read by Wing Commander T. R. Cave-Browne-Cave, R.A.F., before the British Association at Bournemouth is reproduced at some length below.

This paper will be found to contain a large amount of information as to the practical difficulties met with in the design and operation of airships.

The question of various methods of compensating for the weight of fuel consumed, without discharging hydrogen, are of great importance, and are touched on by the author.

Wing Commander Cave's remarks on the subject of the fire risks in airships are reassuring and comforting, and his demonstration of the advantage of increased size in airships is simple and convincing.

The war-time products of the Sopwith Aviation Co., Ltd., are briefly described in this week's article on "Modern British Aeroplanes." Mr. T. O. M. Sopwith, the founder of the firm, was one of the earliest of British pilots, and his achievement of December 18th, 1910, in flying from Eastchurch to Thirlmont (Belgium), 169 miles, on a 60-h.p. Howard Wright biplane must be regarded as one of the finest of the early British performances.

The success that has attended his later efforts as a constructor of aircraft must be regarded as a fitting reward for his pioneer efforts of early days.

A German criticism of the Liberty engine appears on page 1266.

AIRSHIPS.

By Wing Commander T. R. CAVE-BROWNE-CAVE, C.B.E., R.A.F.

A lecture delivered to Engineering Section "G" British Association.

INTRODUCTION.

Airship development has depended very largely upon the work, not only of those scientific men whom we have been able to have in the Service during the war, but of the many others who have given invaluable assistance on an enormous variety of matters. The future development involves even more scientific problems, and I have framed this lecture to include, not the points of most general interest, but mainly those difficulties of greatest interest to the scientific world which we know from experience is always ready to help. The circumstances governing the variation of static equilibrium of an airship will be discussed.

AIRSHIP FABRICS.

The principal difficulty which is experienced with the use of airships for long periods, more particularly in tropical countries, is the deterioration of the fabric under the action of sunlight. This deterioration takes two forms, firstly the strength of the textile material is decreased, and secondly the gas-holding properties of the proofing material are destroyed.

The rigid airship contains a large number of gasbags formed of the lightest possible gastight material. This is usually a very light cotton cloth proofed with goldbeaters' skin stuck to it by means of rubber solution. The skins are then varnished as a protection against moisture. The actual tensile strength of this fabric is only sufficient to prevent damage during the motion of the gasbags in the ship's framework.

The outer surface of the ship is formed by an outer cover of linen of much the same strength as that used for aeroplane wings. The duties which this outer cover has to perform are very important. It has to be stretched sufficiently tight to prevent any flapping or appreciable deformation during the passage of the ship through the air. It must be waterproof and also water-repellant in order to reduce the weight added to the ship by a shower of rain. A further function, and one very difficult to fulfil, is the protection that it has to afford to the internal gasbags.

The outer surface of the non-rigid ships is made with a shining aluminium finish so that as much as possible of the heat and light is reflected. The rubber immediately under the surface is made to contain considerably more litharge than otherwise necessary, as this material absorbs a large proportion of that light which passes the reflecting surface. A similar system is being followed with the outer covers of rigid airships, and judging by the excellent results obtained from somewhat similar methods employed on aeroplane fabric, the protection both to the fabric of the cover and to the internal bags should be very good.

Experience with rigid outer covers is at present small, but it has been found that with non-rigid envelopes made by our latest methods of proofing, the deterioration of the outer surface becomes clearly visible before any serious loss of strength has taken place.

The envelope of a non-rigid ship is formed of layers of fabric which have to be of considerable strength in order to resist the small internal pressure necessary to maintain the rigidity of the ship. Between these layers of fabric is placed one or more layers of gas-tight rubber.

The strength of a fabric envelope can be calculated with considerable accuracy if it is assumed that the fabric is undamaged. The reduction of strength caused by a small local wound is, however, very considerable, because such a wound causes concentration of stress at the edges of the hole, and there is a tendency for the fabric to rip. This dangerous concentration of stress can be very largely avoided in a two-ply fabric if the threads of one-ply are laid at 45 deg. to those of the other. The threads of the diagonal ply then form an effective means of distributing the stress, and also when tearing actually begins tend to form together into a bunch which exerts considerable concentrated resistance to the extension of the tear.

The following table shows the reduction of strength caused by a ½ in. wound cut in a 6-in. strip in a direction at right angles to the direction of the stress.

Fabric.	$\frac{\text{Strength wounded.}}{\text{Strength unwounded.}}$
Single ply cotton	0.39
Single ply linen	0.52
2-ply parallel CC.	0.33
2-ply diagonal BD.	0.57
2-ply diagonal CC.	0.72
3-ply diagonal CCC.	0.68

The strength of the fabric used in the envelope of the "N.S." airships is 1,770 kilos. per metre, i.e., 100 lb. per in.

The stress in an airship envelope is very largely determined by the internal pressure which it is necessary to maintain in order to keep correct shape. The circumferential stress which this presure produces in the fabric is, like that in an ordinary boiler shell, about twice that in the longitudinal direction. Ordinary fabric is usually about equal strength in the warp and weft directions, and in order to resist the circumferential tension the envelope has to be made with a quite unnecesary longitudinal strength with a consequent increased weight.

It has been found possible to reinforce an envelope by means of flat bundles of string placed circumferentially round the envelope at suitable intervals, so that these strings contribute the difference between the circumferential and longitudinal tensions. The fabric, therefore, need only be made sufficiently strong to take the longitudinal tension. This system of reinforcement has not at present been tried on a full-size envelope, but was found to give very satisfactory results when adopted on 20-ft. model envelopes which were tested to destruction.

In considering the best material for envelope reinforcement, very careful attention had to be directed to the tensile strength of a material compared with its weight for a given length. This was found to be most conveniently represented by the length of the strand which would hang vertically down without breaking under its own weight. This was termed the breaking length of the material. Values for some usual materials are given in the table :—

Material.	Breaking length in metres.
Thread, 3-strand cotton	12,600
Thread, 3-strand flax	15,900
Thread, 3-strand hemp	12,800
Pain's light rocket cord	28,600
Best Italian hemp cord	27,500
Airship cotton fabric	30,000
Aeroplane linen fabric	14,000
Envelope fabric (proofed)	4,000
Reinforcing string tape	12,600
Aluminium 10 tons/in.	6,400
Duralumin 24 tons/in.	14,400
Mild steel 30 tons/in.	6,200
H/T steel 100 tons/in.	20,600

GAS-TIGHTNESS.

The gas-tightness of fabrics and of seams formed in them is a matter which has been very thoroughly dealt with in papers to the Advisory Committee for Aeronautics, which it is understood will be published very shortly. It may, however, be said that the amount of hydrogen which leaks out through the fabric of an airship is a matter of purely nominal importance with fabrics of the excellence now available. The matter of real importance is the passage of air through the fabric into the gas space. This air reduces the purity of the gas, and unless very large quantities of gas are consumed by the ship by discharge through the valves, it is impossible to eliminate this air sufficiently to maintain the gas purity which is necessary to give the ship her lift.

An interesting point which has been clearly established is that the air which diffuses into the gas space tends to collect at the bottom of the envelope, more particularly in trilobe ships where the circulation of gas is less free than in circular envelopes. Samples of gas taken from within 12 in. or so of the bottom of the envelope show a hydrogen purity of some 1 per cent. lower than that in the rest of the envelope. Further the ratio of oxygen to nitrogen in this impurity shows that the air has come in by diffusion and not by mechanical leakage. This puddle of impure gas only collects while the ship is at rest in the shed, and is quickly dissipated as soon as flight is started.

Some of the chemical and physical changes which accompany the loss of gas-tightness of a rubber-proofed fabric are at present very obscure. Loss of gas-tightness appears to proceed very slowly for a considerable time, and then to become very rapid, almost in the nature of a sudden collapse. In some cases the gas-tightness is actually found to increase for a short time after the fabric has been made.

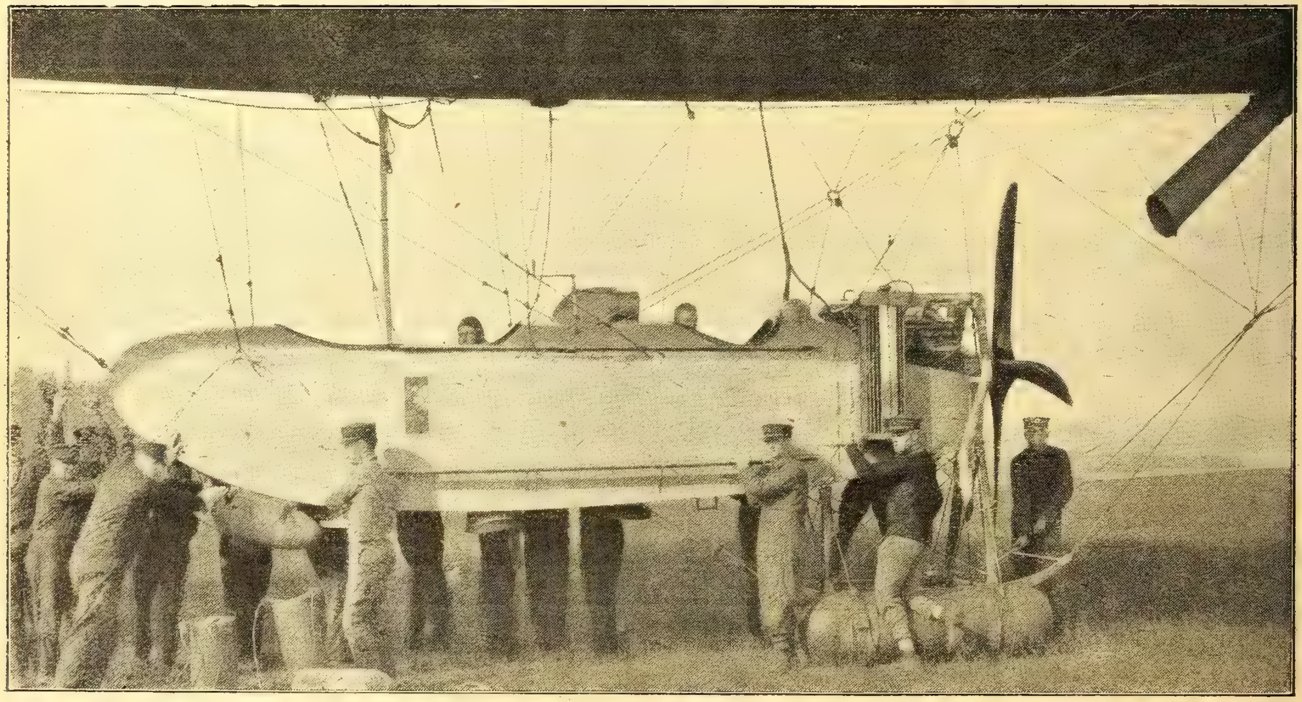
THE EFFECT OF TEMPERATURE CHANGES.

The effect of the sun's radiation on the outer surface of the ship produces other important results. It raises the temperature of the gas and the air contained within the outer envelope to a point considerably above that of the surrounding air. This results in what is termed "false lift." Immediately the strength of the sun's ray decreases the superheat begins to disappear, and the false lift of the ship is reduced. The extent of this superheat sometimes amounts to 30 deg. F. to 35 deg. F., corresponding to a loss of some 6 per cent. of the total lift of the ship. A rigid ship flying towards the sun superheats the gas in her forward compartments considerably more than that aft, and a change of trim results. Flow of air over the surface of the ship, and the circulation of air between the outer cover and the gasbags of a rigid ship tend to reduce superheat.

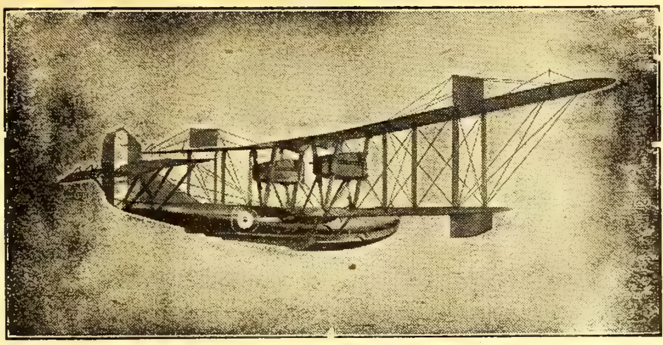
Changes of temperature in which the gas and air readings remain equal to each other, do not involve change of lift unless the expansion of the gas is sufficient to involve discharge of gas from the ship. If the ship becomes light and is allowed to rise higher than is otherwise necessary, much gas may be discharged. If weight can be taken into the ship, so that she does not rise, the loss of gas may be avoided, and this may be of considerable value during the next night when the ship has cooled down, and possibly absorbed moisture.

There are several methods of taking weight into the ship. One is to condense the exhaust, and by this method a weight considerably in excess of the weight of fuel burnt can theoretically be obtained. It is found that the exhaust gas from a 260 h.p. engine can be cooled to within 10 deg. F. of the atmosphere temperature in a cooler weighing about 120 lb. This would, in a rigid airship, take the place of a silencer weighing some 60 lb., and the added weight is not, therefore, very great. The form of cooler used resembles a honeycomb radiator with 1-in. tubes through which the air passes, the exhaust passing through the space around the tubes. There is, however, difficulty in this condensation, because the cooling surfaces rapidly become fouled and conductivity very greatly reduced.

An alternative is to draw water direct from the sea, either by a propeller-driven pump contained in a body towed by the ship and discharging water up a hose, or by filling a fabric drogue



The Car of an American Airship of the "E" Class, fitted with a Thomas engine of 140 h.p.



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and hoisting the water into the ship by winch. Both these operations involve considerable difficulty in handling the ship, more particularly because at the time she wants water she is seriously out of trim.

HYDROGEN AS FUEL.

A possibly more promising alternative is to burn the hydrogen which would otherwise have to be discharged, and to condense the water of combustion. This is considerably easier than condensing the exhaust gas, because there will be no fouling of the cooling surfaces.

Experiments have been made on the use of hydrogen as fuel, and considerable success has been achieved. It is found that with very simple gear hydrogen can be burnt in an ordinary airship engine. When burning hydrogen alone it is not possible to develop more than 25 per cent. or 30 per cent. of the power which the same engine would give on petrol If greater power is attempted serious detonation in the cylinder results. By providing a hydrogen-air mixing valve in parallel with the petrol carburetter it is possible to obtain any fraction up to the full power of the engine by suitably proportioning the relative amounts of hydrogen and petrol mixture burnt. The proportion of hydrogen which it is possible to burn depends upon the proportion of full power which is required from the engine. Under all ordinary circumstances a very considerable saving in fuel can be achieved.

THE FIRE RISK.

The risk of fire in airships has considerably reduced the warlike operations which these aircraft have been allowed to undertake. For commercial purposes some small risk of fire also exists. The proportion of this risk which is due to the presence of hydrogen is, in the case of commercial craft especially, considerably smaller than is generally believed. The engines and other possible sources of ignition are carefully arranged at a considerable distance away from any point at which gas can possibly be discharged, and the speed with which gas when liberated rises clear of the ship is such that only a very serious fire in one of the engine cars could possibly be communicated to the gas.

Although during the war British airships flew nearly 3,000,000 miles the only ships which were destroyed by fire were, one, the first, "S.S." ship which ran into some telegraph wires and caught fire, the crew escaping; two, a coastal ship which landed on the water and caught fire for an unknown reason, and lastly, an "S.S." ship which landed on top of another in a thick fog.

The petrol system is a source of danger which is probably at least as great as that due to the gas. Large quantities of petrol are stored in the keel of a rigid airship, and the petrol system is necessarily connected to the engine cars. The possibility of transmitting fire to the envelope of the ship would be very greatly reduced if paraffin or an equally safe fuel could be employed. The added safety which would be derived from a less inflammable fuel would probably justify some increase in the weight of machinery necessary to develop the required horse-power.

THE IMPORTANCE OF FUEL ECONOMY.

It may here be well to draw attention to the relative importance of the weight of the engine and the weight of the fuel consumed. This relation is very different from that which obtains in an aeroplane where the length of flight is considerably less. An aeroplane engine weighs some 3 lb. per horse-power, and may be expected to burn a weight of fuel equal to its own in six or eight hours. The machinery of an airship will, of course, during an ordinary passage run for many times this duration of flight, and further a large proportion of the flight will be carried out at less than the full power of the engines. A "North Sea" airship carried out one patrol of 101 hours, while the flight of R.34 to New York involved a continuous flight of 106 hours. From this it will be clear that an airship engine must be one of the very highest fuel economy, not only at full power, but also at fractions down to 25 per cent. of the maximum power. The increase of weight of engine justified by a small improvement in fuel economy is, therefore, considerable.

STEAM PLANTS.

The use of steam for airship propulsion has been considered, and although the convenience of such a system is very great and the weight of machinery, including boiler and condenser, is not seriously in excess of the corresponding petrol engine, there appears at present no likelihood of reducing the fuel consumption to much less than 1 lb. per horse-power hour. This is clearly prohibitive when compared with the consumption by a petrol engine of less than 0.5 lb. per horse-power hour.

THE DESIGN OF AIRSHIP ENGINES.

In addition to the requirement of high fuel economy, it is of the greatest importance that an airship engine should be able to run for very long periods without risk of breakdown. A further point is that the engine should be arranged in such a way that all its parts which are liable to failure during running, are made easily accessible, so that a repair can be carried out in the air. This is a very important difference from the aeroplane engine, which is normally inaccessible during flight. An airship engine can be stopped during flight, and must be regarded as at least as easily accessible as that of a motor-boat. The space round it is generally at least as ample, and it is only in exceptional circumstances that the motion of the ship will in any way interfere with the execution of repairs. Defective magnetos have frequently been replaced by others of a different type and the new ones correctly timed. One repair which involved the removal and replacement of one complete cylinder of a two-engined ship, was successfully carried out, and the engine used without trouble for the remainder of the flight. A satisfactory airship engine must, therefore, be one in which repairs, even of this magnitude, can be effected as easily and with as little delay as possible.

AIRSHIP PROPELLERS.

The variation of speed of an airship renders the design of her propellers one of very considerable difficulty. She may be required to run on one engine developing its full power and giving the ship a very low speed, or on all her five engines giving her full speed. Under these circumstances the efficiency of her propellers must necessarily be low in some conditions. A satisfactory means of varying the pitch of the propeller should, therefore, lead to a very considerable gain in the efficiency of the ship as a whole. A propeller in which the alteration of the blade angle is sufficient to give reverse thrust would be very convenient, and avoid the reverse gear-box now required.

ONE ADVANTAGE OF AIRSHIPS.

One of the advantages which an airship possesses over an aeroplane is that her greater range will enable her to avoid atmospheric disturbances, and also to take more advantage of any depression which can be approached in such a way as to obtain a favouring wind. Meteorological information can now be obtained from a fairly considerable number of points, but prediction is rendered considerably easier if it is possible to read the barometer at a point on the ground below the ship herself. A barometer reading taken in the ship is, of course, useless unless the height of the ship can be determined by means other than barometric pressure. Instances have occurred in which the barometer has changed so greatly during an airship's patrol, that the ship struck the water during the night when her aneroid registered a height of 300 ft. When crossing an unknown country it is also desirable to determine the height above the ground, independent of the barometer and height above sea-level. To determine this height above the sea, it has been suggested that the report of a rifle discharged in the ship and reflected from the surface of the sea should be timed. A special form of stop-watch, which was used for gunnery research during the war, makes it possible to measure the interval between two similar sounds with an accuracy of within 1/10 second. Up to the present the method has not been found very satisfactory, on account of the difficulty of hearing the reflected report if the ship is not stopped, or her speed seriously reduced. It is, however, possible that in an emergency this device could be used with success by stopping or slowing down the ship. This is, of course, a serious disadvantage to the method, and something better is required.

HYDROGEN AND HELIUM.

The generation of hydrogen is probably the greatest difficulty in extending the use of airships to more or less undeveloped countries. Hydrogen at present is manufactured for airship purposes mainly from coke. Some method of manufacturing hydrogen from wood or other vegetable matter would probably prove of very great value in allowing airships to work in those countries in which they have their greatest advantage over other possible forms of transport.

The use of helium has been considered, and much experimental work has been done on the extraction of this gas from the natural gases obtained from wells in Canada and America. The price of this gas, when made by present methods or by any system which appears probable in the immediate future is, however, almost prohibitive, and failing a really remarkable discovery such as the possibility of getting hydrogen to degrade into helium, there does not appear much possibility of reducing the price to a commercial possibility.

STRESSES AND CONSTRUCTION.

The calculation of the stresses produced in the hull structure of a rigid airship under the many different conditions

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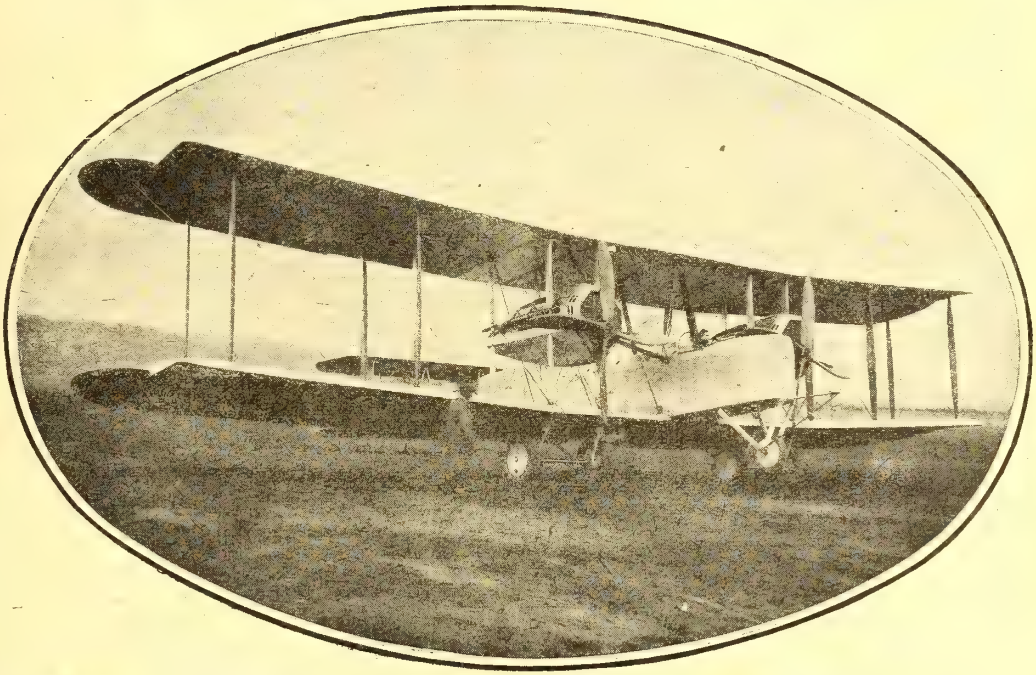

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encountered is one of considerable complexity, and one which cannot come within the limits of this lecture. The most interesting members of the structure may be regarded as long struts some 16 ft. long, designed to fail, when the ends are supported freely, under an end load of some 8,000 lb., or a distributed load of some 2,000 lb., i.e., 120 lb. per ft. The construction of such a girder has involved several very interesting, though probably not novel, principles. The bracing pieces which have to be made of an easily stamped section, are formed so that their thin edges come in the neutral axis of the piece, and are, therefore, little exposed to secondary bending. The end of the bracing piece is carefully shaped so that the loading is as little eccentric as possible. Bracing pieces are arranged in pairs, and are riveted together where they cross. The piece in compression can then derive support from its fellow, which must at that time be in tension.

An interesting manner of assessing the relative merits of various types of strut is to consider how far the construction allows the material to develop its full yield stress. If a form of construction is such that the crippling load divided by the area of cross section of the strut approximates closely to the yield stress of the material, the form of construction must be considered very good.

The Advantage of Large Airships.

The advantage to be gained, from a commercial point of view, by using a large ship is clear from the following consideration. For ships covering the same range at the same speed and having similar shape, the displacement varies as the cube of the linear dimensions (l^3), the weight of hull, fabric, etc., as l^3, the resistance, and, therefore, the weight of machinery and fuel as l^2

$$\therefore \begin{array}{ccccc} \text{gross lift} & & \text{wt. of hull, \&c.} & & \text{wt. of machinery} \\ K_1 l^3 & = & K_2 l^3 & & K_3 l^2 \end{array}$$

$$\text{Weight of fuel consumed} = K_4 l^2.$$

$$\text{Hence} \qquad \frac{\text{freight}}{\text{fuel}} = \frac{K_1 l^3 - K_2 l^3 - K_3 l^2}{K_4 l^3},$$

a function which clearly increases with the size of the ship.

It is, therefore, interesting to consider what limits the size of rigid and non-rigid ships of the types at present in view.

Practical Limits of Size

Increase of length of a rigid of given cross section appears to call for no increase in the strength of her hull, provided the load is properly distributed. No serious restriction to the length of rigids is, therefore, in view. The most dangerous stresses are produced in the main transverse members of rigids by unequal inflation of the gasbags on either side of a bulkhead. The bulkhead is formed of wires lying in the transverse plane and attached to the joints of the main transverses. Difference of pressure in adjacent bags, therefore, induces great tension in these wires, and hence compression in the transverse frame. The possible head of gas produced by the total deflation of one bag increases with the ship's diameter, and so does the span of the wires. In a ship of large cross section, therefore, the compression in the transverse frames becomes very serious.

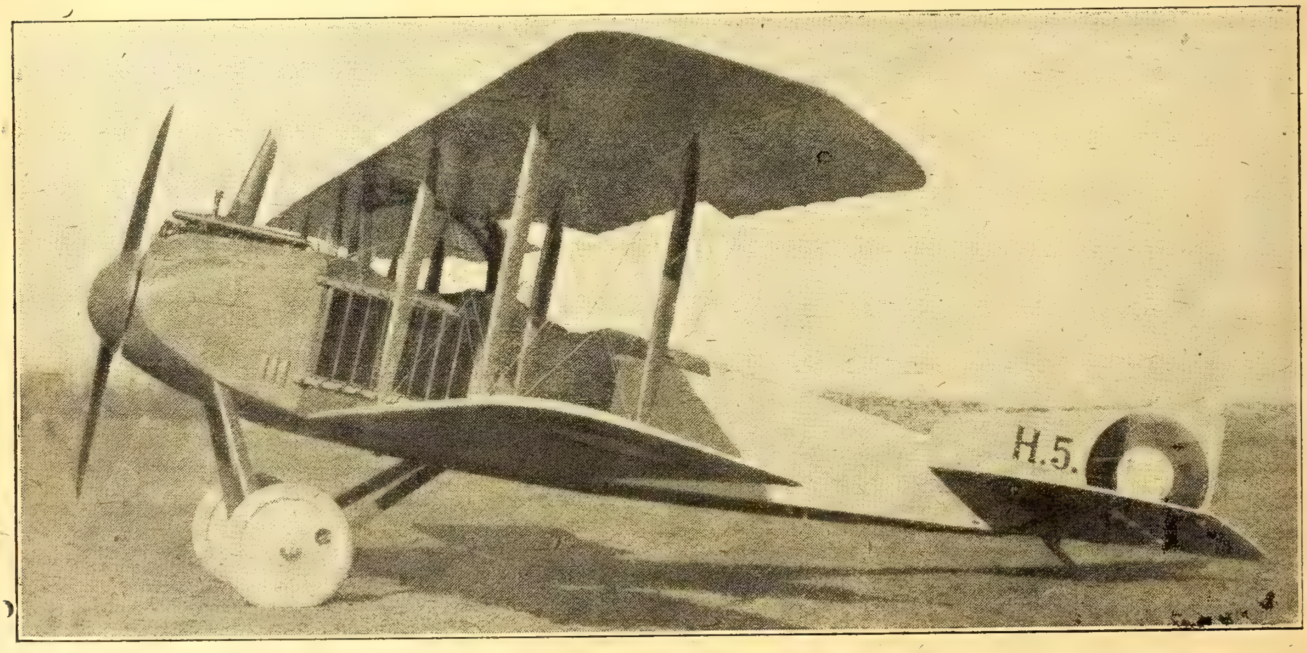
The non-rigid airship is not, as at present designed, divided into compartments by diaphragms capable of resisting a difference of pressure in the gas on either side. If the ship takes up a very steep pitch the internal pressure at the upper end of the ship wil be seriously increased if the pressure at the lower end is still to be maintained above atmospheric. This accumulation of pressure at the upper end of the ship while pitching may prove a serious difficulty in a really large non-rigid, but it is probable that by the employment of a circular section and fabric reinforced in the manner already referred to sizes considerably greater than any we have built at present can be achieved. The development of a large non-rigid offers—at any rate in the author's opinion—very great promise of advantage, because the ratio of disposable lift (fuel and freight) to the total displacement of the ship is so good. A non-rigid of 500,000 cubic ft. capacity, i,e., carrying a useful load of 7½ tons, will have about the same value (50 per cent.) for this ratio as a rigid ship of four times the capacity (2,000,000 cubic ft.).

The slides which followed illustrated various operations carried out by airships during the war. The last one, which showed the mooring of a rigid airship to a mast, is of extraordinary importance. The difficulty of handling a large airship is very greatly magnified in the opinion of most people. The only serious difficulty lies in getting the ship into her shed when a wind is blowing across the entrance. Bringing an airship to the mast where she is always head to wind and the air is not even disturbed by the presence of a shed, is easy. A 60-ton airship lands in equilibrium so that the upward force the landing party exerts is nil. Compare this with even a 20-ton aeroplane touching the ground at 50 m.p.h., and running a quarter of a mile, at the end of which it is pressing on the surface of the aerodrome with its full weight of 20 tons.

The airship shown in this slide remained at her mast for three weeks in charge of watches, each consisting of one N.C.O. and five men. She experienced winds of 35 m.p.h., with gusts up to 43 m.p.h., very heavy rain and bright sunshine, also several thunderstorms, including the very violent one of July 17th, which passed over the ship at 2 a.m. At times the whole ship appeared to be aglow, and it was easily possible to read the instruments in the keel by the light of the discharges.

The ability to land and be safely secured in bad weather very greatly reduces the number of days which must be regarded as too bad for flying.

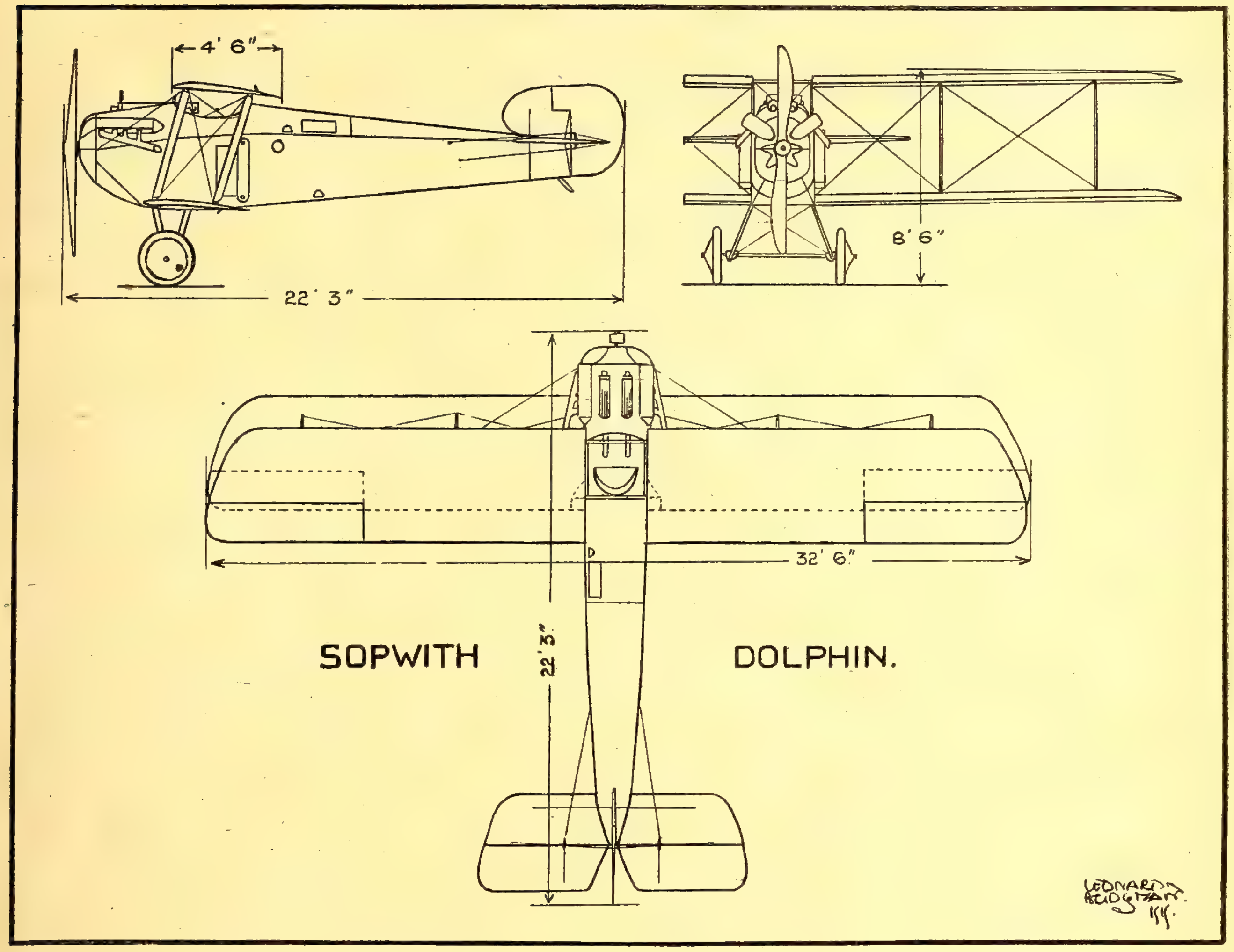
That the airship, both rigid and non-rigid, is a valuable field of investigation which will justify development, both for warlike and commercial purposes, few people who know anything of the details have any doubt. Those who know much about airships are more hopeful than those who know little. The greatest airship enthusiasts are, perhaps, those who know the achievements and the troubles of both airships and aeroplanes.



A Danish type H two-seater Biplane built by the Army Factory at Copenhagen (140 h.p. Argus engine).

MODERN BRITISH AEROPLANES.

XVII.—The Sopwith Aviation Co., Ltd.



SOPWITH DOLPHIN.

The Sopwith Aviation Co. was formed in 1911 at Brooklands by Mr. T. O. M. Sopwith, who had qualified as a pilot in Nov., 1910, on a Howard-Wright biplane, and during 1912 a 70-h.p. tractor biplane and a 40-h.p. A.B.C.-engined biplane, on which Mr. H. S. Hawker set up a British duration record of 8 hours 23 mins., were produced. In 1913 the Sopwith "Tabloid" was brought out, and this machine was the forerunner of all the small fighting scouts of to-day. In 1914 a 100-h.p. Mono-Gnôme-engined "Tabloid" biplane, fitted with floats and flown by Mr. Howard Pixton at Monaco, won the "Schneider" Cup. During the war the firm produced a series of highly efficient aeroplanes, and it is interesting to note that two of their "Tabloid" biplanes were the first machines to bomb Cologne and Düsseldorf in Nov., 1914. Sopwith 1½-strutters were also used by the French Air Service to bomb Essen and Munich.

THE SOPWITH "TABLOID" SCOUT.

The Sopwith "Tabloid" was used during the first part of the late war principally by the R.N.A.S. for almost any odd jobs going. This machine was a slight modification of the 1913 machine by having a Vee-type undercarriage in place of the skid and wheels arrangement and a larger engine, usually the 100-h.p. Mono-Gnôme.

THE SOPWITH "SCHNEIDER" SEAPLANE SCOUT.

The Sopwith "Schneider" seaplane was the original type of machine which won the "Schneider" Cup at Monaco in 1914. The R.N.A.S. ordered a considerable number of these machines, and, although at times they were considerably abused by being made to carry bombs and other armament, were in use right up to the signing of the armistice. Latterly, the fitting of the 130-h.p. Clêrget engine considerably improved their performance and popularity.

SPECIFICATION.

Type of machine	Single-seater tractor seaplane.
Name or type No. of machine	Sopwith "Baby" or "Schneider."
Purpose for which intended	Sea scouting, fighting, etc.

Span	25 ft. 8 in.
Gap, maximum and minimum	4 ft. 6 in.
Overall length	22 ft. 10 in.
Chord	5 ft. 2 in.
Total surface of wings	240 sq. ft.
Total area of tail	26 sq. ft.
Area of elevators	12 sq. ft.
Area of rudder	6.5 sq. ft.
Area of fin	2.7 sq. ft.
Engine type and h.p	100-h.p. Clêrget.
Landing speed	45 m.p.h.

THE SOPWITH "GUN 'BUS."

The Sopwith gun carrying biplane was brought out in 1914 and was the only Sopwith production that departed from the more usual tractor type of machine. It was fitted with the 160-h.p. Sunbeam engine and owed its inception to the demand for large fighting machines before the introduction of the fire control gear for tractor machines. It resembled the F.E. in many respects with the exception that it had staggered main planes and a skid undercarriage

THE SOPWITH "PUP."

The Sopwith "Pup" was a direct descendant of the "Tabloid" of early 1914, and was largely used by the R.N.A.S. from 1915 onwards. During its existence it has maintained the reputation of being one of the most delightful machines to fly that have ever been built. In addition its performance, fitted with so low a powered engine as the 80-h.p. Le Rhône, was astonishing, and although its use as a land fighting scout was overshadowed by modern high-powered machines, it was used largely almost up to the end of the war as a ship's scout and for deck flying, etc.

SPECIFICATION.

Type of machine	Single-seater Tractor Biplane.
Name or type No. of machine	Sopwith "Pup."
Purpose for which intended	Fighting Scout.
Span	26 ft. 6 in.

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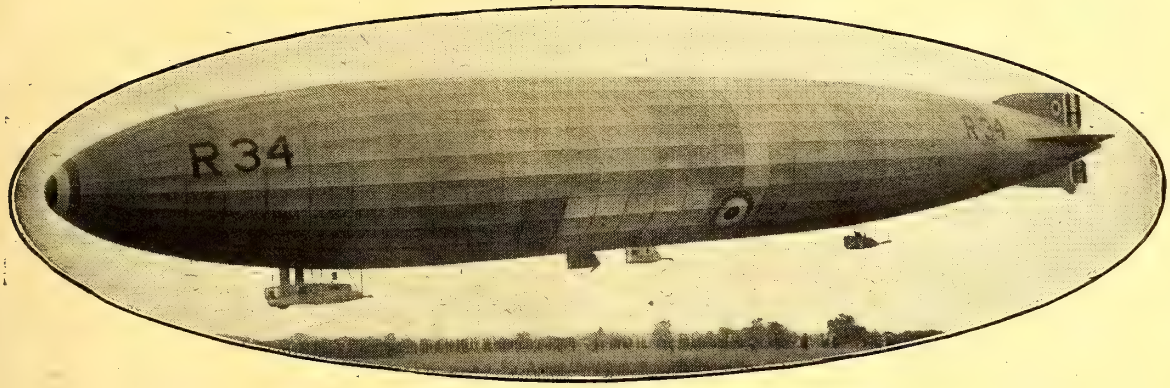

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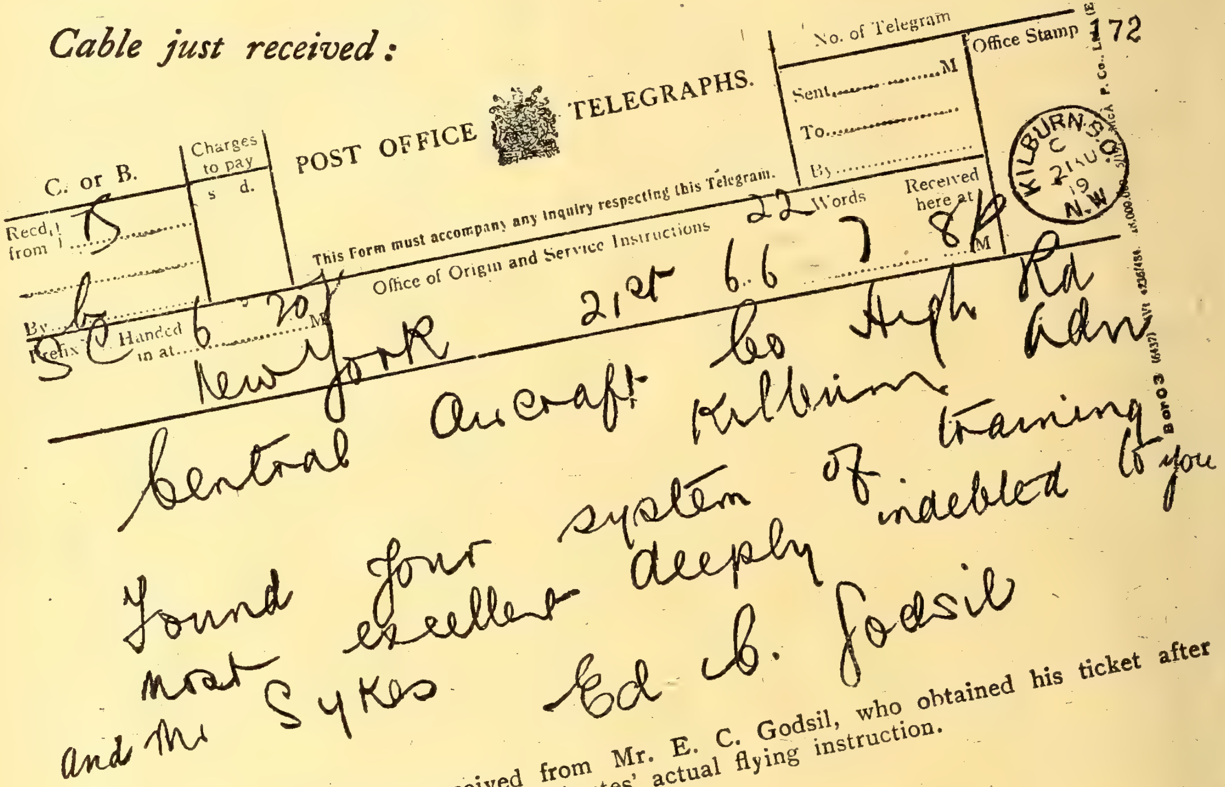

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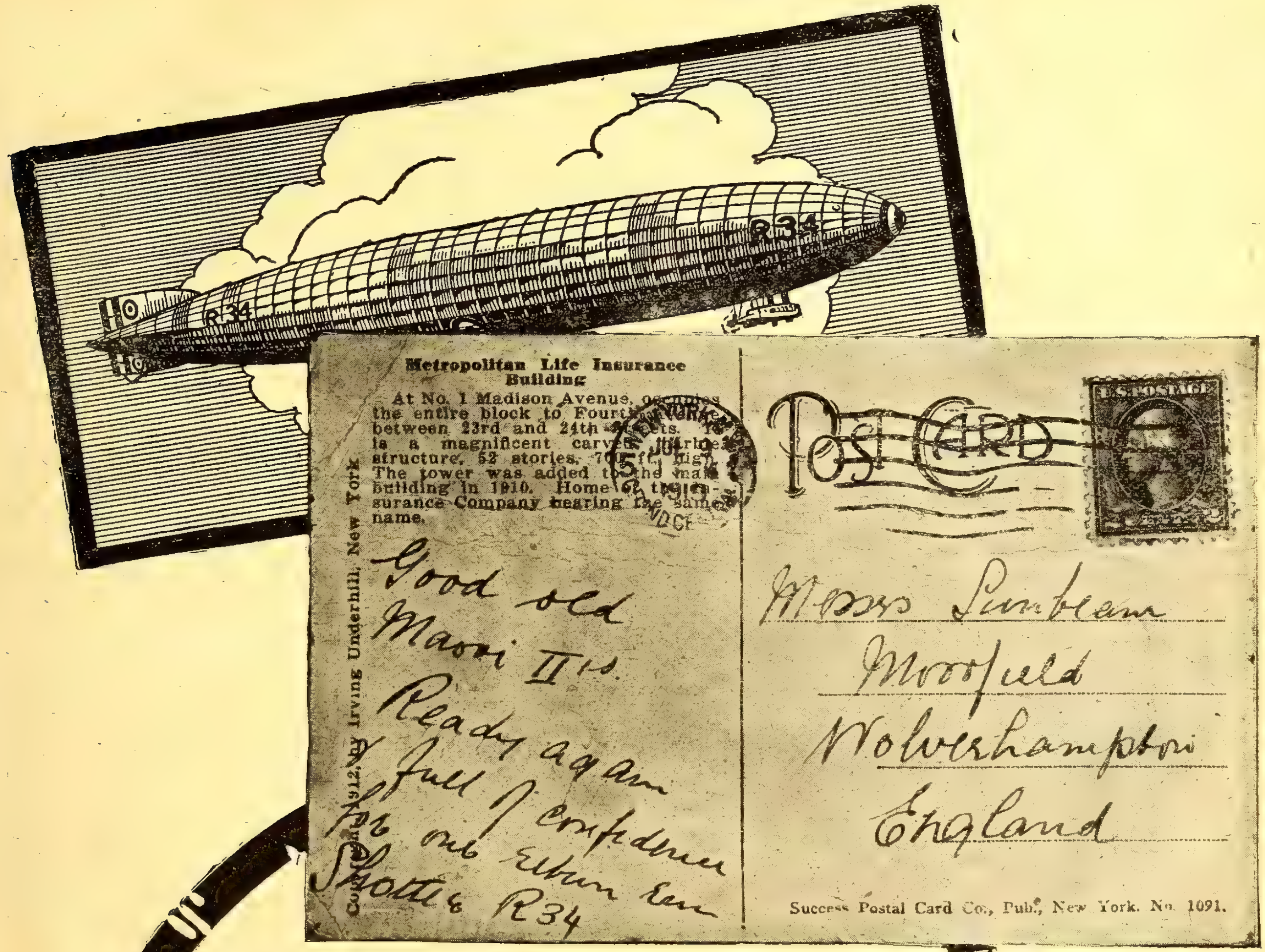
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SUNBEAM-COATALEN AIRCRAFT ENGINES

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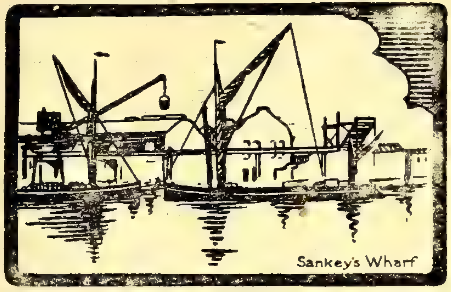

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Aeroplane Manufacturers—

Aircraft Manufacturing Co., Ltd., Hendon. "Airmanship, Hyde, London" Kingsbury 220.

Armstrong, Sir W., Whitworth & Co., Ltd., Newcastle-on-Tyne. "Armstrong Aviation, Newcastle-on-Tyne." Gosforth 500.

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Boulton & Paul, Ltd., Rose Lane, Norwich. "Aviation, Norwich." Norwich 851.

British Aerial Transport Co., Ltd., Head Office: 38, Conduit Street, London, W.1. "Bat'gram Reg. London." Mayfair 637, 638.

Works: Hythe Road, Willesden, London, N.W.10. "Aerbrirans, Phone, London." Willesden 2272, 2273.

British & Colonial Aeroplane Co., Ltd. (The Bristol Co.), Filton, Bristol. "Aviation, Bristol." Bristol 3906.

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Eastbourne Aviation Co., Ltd., Eastbourne. "Aircraft, Eastbourne." Eastbourne 1776.

Gosport Aircraft Co., Gosport "Flight, Gosport." Gosport 217.

Grahame-White Company, Ltd., London Aerodrome, Hendon. "Volplane, Hyde, London." Kingsbury 120.

London Office, 12, Regent Street, S.W.1. Regent 2084.

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Hooper & Co., Ltd., 54, St. James Street, Piccadilly, London, S.W. "Sociable, St. James, London." Regent 912.

Mann, Egerton & Co., Ltd., Norwich. "Motors, Norwich." Norwich 482 (4 lines).

Martinsyde, Ltd., Brooklands, Byfleet, "Martinsyde, Weybridge." Woking 331; Byfleet 171.

"Nieuport" & General Aircraft Co., Cricklewood, London, N.W.2. "Nieuscoat, Crickle, London." Willesden 2455.

Phœnix Dynamo Manufacturing Co., Ltd. Thornbury, Bradford "Dynamo, Bradford." Bradford 3700 (4 lines).

Roe, A. V., & Co., Ltd., Manchester "Triplane Manchester." City 8530-8531, Manchester.

Saunders, S. E., Ltd., East Cowes, I.O.W. "Consuta, East Cowes." Cowes 103.

Short Bros., Rochester, Eastchurch and Whitehall House, S.W. "Tested. Phone, London" Regent 378.

The Siddeley Deasy Motor Car Co., Ltd., Coventry. Coventry 954. "Deasy, Coventry"

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Waring & Gillow, Ltd., Hammersmith, "Warisen, Ox, London." Museum 5000.

Westland Aircraft, Yeovil. "Aircraft, Yeovil." Yeovil 129.

White, J. Samuel, & Co., Ltd., East Cowes. "White, East Cowes." Cowes 3.

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Airships, Ltd., High Street, Merton. Wimbledon 1314.

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C. G. Spencer & Sons, Ltd. (See under "Balloons.")

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Coan, R. W., 219, Goswell Road, London, E.C.1. "Krankases, Isling, London." City 3846.

Balloons—

C. G. Spencer & Sons, Ltd., 50A, Highbury Grove, N.5. "Aeronaut, London." Dalston 1893.

Bent Timber Parts—

Hopton & Sons, George Street, Euston Square, London, N.W.1. "Hoptons, Eusquare, London." Museum 496.

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Bearings (Etonia Cast Phosphor Bronze)—

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Yorkshire Engineering Supplies, Ltd., Wortley, Leeds. "Yes, Leeds" Central 3927.

Blowpipes (Oxy-Acetylene)—

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Imperial Light, Ltd., 123, Victoria Street, London, S.W.1. "Edibrac, Phone, London." Vic. 3540 (3 lines).

Bolts—

Mitchell Wedgewood & Co, Campbell Works, Stoke Newington, London, N.16 Dalston 2500 (2 lines).

Books (Aero Engines)—

Dykes' Auto Encyclopedia, Gillam, 149, Strand, W.2.

Buildings—

Boulton & Paul, Ltd., Rose Lane, Norwich. "Aviation, Norwich." Norwich 851.

Rubery Owen & Co., Darlaston, South Staffs.

Cable Coverings and Cable Controls—

The Bowden Brake Co., Ltd., Tyseley, Birmingham. "Bowden, Acock's Green." Acock's Green 103 & 104.

Bowden Wire, Ltd., Willesden Junction, "Bowirelim, Harles. London." Willesden 2400 (3 lines).

Herbert Terry & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61.

Carburetters—

Hobson, H. M., Ltd., 29, Vauxhall Bridge Road, S.W.2. Victoria 4670.

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Casein—

Nieuwhof, Surie & Co., Ltd, 5, Lloyds Avenue, London, E.C.3. "Suricodon, Fen, London." Avenue 34 and 35.

Clothing—

Burberry's, Ltd., Haymarket, S.W.1. Regent 2165.

Dunhill's, Ltd., Euston Road, N.W.1. "Dunsend, London." North 3405-6.

Component Parts—

Accles & Pollock, Ltd., Oldbury, Birmingham. "Accles, Oldbury." Oldbury 111 (4 lines).

Brown Bros., Ltd., Gt. Eastern St., E.C.1.

Central Aircraft Co., High Road, Kilburn, N.W.6. "Aviduction, Phone, London." Hampstead 4403 & 4404.

Thompson Bros. (Bilston), Ltd., Bradley, Bilston, England. "Thompson Bros., Bilston." Bilston 10.

Cords, Tapes, and Threads—

MacLennan, J., & Co., 30, Newgate Street, E.C.1. And at Glasgow City 3115.

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Titanine, Ltd., 175, Piccadilly, W.1. "Tetrafree, Piccy, London." Gerrard 2312.

British Cellulose Co., 8, Waterloo Place, S.W.1. "Cellutate, London." Regent 4046.

The British Emaillite Co., Ltd, 30, Regent Street, S.W.1. "Ridleypren, Piccy, London." Gerrard 280.

Cellon, Ltd., 22, Cork Street, London, W.1. "Ajawb, Reg, London." Gerrard 440.

Robt Ingham Clark & Co., Ltd., West Ham Abbey, E.15. "Oleotine, Strat, London." East 955.

Engines and Parts—

Allen, W. H., & Co., Ltd., Bedford. "Pump Bedford." Bedford No. 1.

Arrol Johnston, Ltd, Dumfries. "Mocar, Dumfries." Dumfries 281-282.

Beardmore Aero Eng, Ltd., 112, Great Portland Street, W.1. "Beardmore, London." Gerrard 238.

The Cosmos Engineering Co., Ltd., Fishponds, Bristol.

Dudbridge Iron Works, Ltd (Salmson), 87, Victoria Street, London, S.W.1 "Aeroflight, Vic, London." Vic 7026.

Gordon Watney & Co., Ltd., Weybridge. "Mercédès, Weybridge." Weybridge 550 (7 lines).

Green Engine Co., Ltd., Twickenham. Richmond 1203.

Gwynnes, Ltd, Hammersmith, W. "Gwynne, Hammersmith" Hammersmith 1910.

Napier & Son, D., Ltd., 14, New Burlington Street, London, W., and at Acton, W. "Nitrifier, London." Gerrard 8926.

Rolls-Royce, Ltd., 14 and 15, Conduit Street, W.1. "Rolhead, London." Gerrard 1654-5-6.

The Siddeley-Deasy Motor Car Co., Ltd., Coventry. "Deasy, Coventry." Coventry 954.

Sunbeam Motor Car Co., Ltd, Wolverhampton "Moorfield, Wolverhampton" Wolverhampton 985.

The Gnôme & Le Rhône Engine Co., Ltd., 27, Buckingham Gate, S.W.1. "Elevenfold, London." Walthamstow 811 (2 lines).

Walton Motors, Ltd., Walton-on-Thames. "Motors, Walton-on-Thames." Walton-on-Thames 220.

Electrical Accessories—

Belling & Co, Montague Road, Upper Edmonton, N.18. "Belling, Edmonton" Tottenham 1084.

Brown Bros., Ltd, Great Eastern St, E.C.1

Gent & Co, Ltd., Faraday Works, Leicester. "Lodestone, Leicester." National 151 (two lines).

Johnson & Phillips, Ltd, Charlton, London, S.E.7 "Juno, London" Central 2207; London Wall 1564.

Electric Cables—

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Mann, Egerton & Co, Ltd, 117, Cleveland Street, London, W. "Installing, Eusroad." Museum 70 (4 lines).

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Herbert Terry & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61.

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Imperial Light, Ltd, 123, Victoria Street, London, S.W.1 "Edibrac, Phone, London." Victoria 3540 (3 lines).

The Auto Controller Co (Fluxite), Vienna Road, Bermondsey, Eng.

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Gosport Aircraft Co., Gosport. "Flight, Gosport." Gosport 217.

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Boulton & Paul, Ltd., Rose Lane, Norwich. "Aviation, Norwich." Norwich 851.

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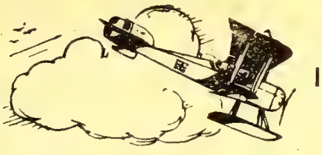

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Moss Gear Co., Ltd., Thomas Street, Aston, Birmingham. "Mosgear, Birmingham." East 407.

Glue—
Cannon, B., & Co., Ltd., Lincoln. London Office: 110, Cannon Street, E.C.4. "Bececolin, Cannon, London." City 1206.
Improved Liquid Glues Co., Ltd., Gt. Hermitage Street, E. (Croid.) "Excroiden, Phone, London." Avenue 4611-2.
Mendine Co., 8, Arthur Street, E.C. Bank 5873.

Goggles—
Triplex Safety Glass Co., Ltd., 1, Albemarle Street, Piccadilly, W.1. "Shatterlys, Piccy, London." Regent 1340.

Heating and Ventilating—
Chas. P. Kinnell & Co., Ltd., 65 & 65A, Southwark Street, London, S.E.1. "Kinnell, London." Hop 372 (2 lines).
The Thames Bank (Blackfriars) Iron Co., Ltd., Upper Ground Street, London, S.E.1. "Hot Water, Friars, London." Hop 763.

Instruments—
British Wright Co., Ltd., 33, Chancery Lane, W.C.2. Holborn 1308.

Instruments (Scientific, Altimeters, etc.)—
Short & Mason, Ltd., Macdonald Road, Walthamstow, E.17. "Aneroid, Phone London." Walthamstow 180.
Wheeler, T., 217, Goswell Road, E.C.1.

Insurance—
Aviation Insurance Association, 1, Royal Exchange Avenue, E.C.3. London Wall 9044.
Bray, Gibb & Co., Ltd., 166, Piccadilly, W.1.
Harold Townend, Ltd., 13-14, Abchurch Lane, King William Street, E.C.4. "Carinsur, London." Central 156 (2 lines).
Percy Wingfield, 22, Newgate Street, E.C.1. City 4672.

Leather Cloth—
New Pegamoid, Ltd., 134, Queen Victoria Street, London. "Pegamoid, Cent., London." City 9704 (2 lines).

Lubricating Oil Refiners and Merchants—
W. B. Dick & Co., Ltd., 90, Fenchurch Street, E.C.3. "Dicotto Fen, London." Avenue 7854 (2 lines).

Magneto Driving Pieces—
Herbert Terry & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61.

Magnetos—
The British Lighting & Ignition Co., Ltd., 204, Tottenham Court Road, W.1. "Vicksmag, Phone, London." Museum 430.
The British Thomson-Houston Co., Ltd., Lower Ford Street, Coventry. "Asteroidal, Coventry." Coventry 278.

Metal Casement Manufacturers—
Henry Hope & Sons, Ltd., 55, Lionel Street, Birmingham. "Conservatory, Birmingham." Central 999 (2 lines).

Metal Manufacturers—
Clifford, Chas., & Sons, Ltd., Birmingham. "Clifford, Birmingham." Central 42-43: Avenue 1432.

Metals in General—
Samuel Mercer & Co., 198 Upper Thames Street, E.C.4. "Reconciled, Cannon, London." City 6342.

Metal Parts and Fittings—
Accles & Pollock, Ltd., Oldbury, Birmingham. "Accles, Oldbury." Oldbury 111 (4 lines).
Arnott & Harrison, Ltd., Hythe Road, Willesden Junction. Willesden 2207.
Bayliss, Jones, & Bayliss, Ltd., Wolverhampton. (Bolts & Nuts.) "Bayliss, Wolverhampton." Wolverhampton 1041.
Blackburn Aeroplane & Motor Co., Ltd., Olympia, Leeds. "Propellors, Leeds." Roundhay 345 (3 lines).

Metal Parts and Fittings (continued)
Brown Bros., Ltd., Gt. Eastern St., E.C.1.
Mann, Egerton & Co., Ltd., 177, Cleveland Street, London, W.1. "Installing, Eusroad, London." Museum 70.
Rubery Owen & Co., Darlaston, South Staffs.
Sankey, Joseph, & Sons, Ltd., Wellington, Shropshire. "Sankey, Wellington, Salop." Wellington 66.
The Selsdon Aero & Engineering Co., Ltd., 1, Albemarle Street, Piccadilly, W.1. "Selaero, Phone, London." Regent 1181.
Thompson Bros., Ltd., Bradley, Bilston. "Thompson Bros., Bilston." Bilston 10.

Metric Bolts—
Cashmore Bros., Hildreth Street, Balham, S.W. Battersea 415.
Rubery Owen & Co., Darlaston, South Staffs.

Miscellaneous—
Anderson, D., & Son, Ltd. (Roofs), Belfast. "Anderson, Belfast." Belfast 4033-4034-4035.
Brown Bros., Ltd., Great Eastern Street, E.C.1. "Imbrowned, Bethread, London." London Wall 6300.
Herbert Frood Co., Ltd., Chapel-en-le-Frith. "Frodobrake, Birmingham." Central 703.
MacLennan, J., & Co., 30, Newgate Street, E.C.1, and at Glasgow. Tapes, Cords, and Threads. City 3115.

Motor Cars—
Arrol Johnston, Ltd., Dumfries. "Mocar, Dumfries." Dumfries 281-282.
Mann, Egerton & Co., Ltd., 379-381, Euston Road, London, N.W.1. "Manegecar, Eusroad, London." Museum 70.
Standard Motor Car Co., Coventry. "Flywheel, Coventry." Coventry 530 (4 lines).

Nameplates and Labels—
The Clegg Metal Engraving Co., Ltd., Worthing. "Clegg, Worthing."

Observation Panels—
Triplex Safety Glass Co., Ltd., 1, Albemarle Street, Piccadilly, W.1. "Shatterlys, Piccy, London." Regent 1340.

Oils—
C. C. Wakefield & Co., Ltd., Wakefield House, Cheapside, E.C.2. "Cheery, Cent, London." Central 11305 & 13466.

Parachutes—
E. R. Calthrop's Aerial Patents, Ltd., Eldon Street House, Eldon Street, London, E.C. "Savemalivo, Ave, London." London Wall 3266-3267.
C. G. Spencer & Sons, Ltd. (See under "Balloons.")

Piston Rings—
The British Piston Ring Co., Ltd., Holbrook Lane, Coventry. "Rings, Coventry." Coventry 1214-5.
The Standard Piston Ring and Engineering Co., Ltd., Don Road, Sheffield. "Ocean, Sheffield." Sheffield 2149.

Presswork—
Rubery Owen & Co., Darlaston, South Staffs.
Terry, Herbert, & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61.

Propellers—
The Aircraft Improvements Co., Mornington Works, Arlington Road, Camden Town, N.W.1.
Blackburn Aeroplane & Motor Co., Ltd., Olympia, Leeds. "Propellors, Leeds." Roundhay 345 (3 lines).
Boulton & Paul, Ltd., Rose Lane, Norwich. "Aviation, Norwich." Norwich 851.
Ebora Propeller Co., 11 & 12, Surbiton Park Terrace, Kingston-on-Thames. "Ebora, Kingston." Kingston 672.
Integral Propeller Co., Ltd. "Aviprop, Hyde, London." Hendon 9: Kingsbury 104.
Lang Propeller, Ltd., Weybridge. "Aerosticks, Weybridge." Weybridge 520-521.
Oddy, W. D., & Co., Leeds. "Airscrews, Leeds." Leeds 20547-8.
Westland Aircraft, Yeovil. "Aircraft, Yeovil." Yeovil 129.

Pyrometers—
The Foster Instrument Co., Letchworth, Herts. "Foster Instruments, Letchworth." Letchworth 26.

Rawhide Hammers—
Ira Stephens, Whitelands Leather Works, Ashton-under-Lyne. "Stephens, 709, Ashton." Ashton 709.

Rigging for Aircraft—
Cradock, Geo., & Co., Ltd., Wakefield, England. "Cradock, Wakefield." Wakefield 466.

Rubber Tubing & Accessories—
Hancock, James Lyne, Ltd., 266, Goswell Road, London, E.C.1. "Masticator, Isling, London." City 3811 & 3812.

Safety Belts—
C. H. Holmes & Son, 38, Albert Street, Manchester. "Semloh, Manchester." City 4432.

Screw-driving Machines—
Russell Bros. (Redditch), Ltd., Littleworth, Redditch. "Inventors, Redditch." Redditch 74.

Seaplane Manufacturers—
Blackburn Aeroplane & Motor Co., Ltd., Olympia, Leeds. "Propellors, Leeds." Roundhay 345 (3 lines).
Phœnix Dynamo Manufacturing Co., Ltd., Thornbury, Bradford. "Dynamo, Bradford." Bradford 3700 (7 lines).
Short Bros., Rochester. "Seaplanes, Rochester." Chatham 627.
Supermarine Aviation Works, Ltd., Southampton. "Supermarin, Southampton." Woolston 37.

Searchlights & Landing Lights—
Brown Bros., Ltd., Great Eastern St., E.C.1.
Imperial Light, Ltd., 123, Victoria Street, London, S.W.1. "Edibrac, Phone, London." Victoria 3540 (3 lines).

Sheet Metal Pressings—
Accles & Pollock, Ltd., Oldbury, Birmingham. "Accles, Oldbury." Oldbury 111 (4 lines).
Blackburn Aeroplane & Motor Co., Ltd., Olympia, Leeds. "Propellors, Leeds." Roundhay 345 (3 lines).
Rubery Owen & Co., Darlaston, South Staffs.

Sheet Metal Work—
The Acetylene Corporation of Great Britain, Ltd., 49, Victoria Street, S.W.1. "Flamma, Vic, London." Vic 4830.
Rubery Owen & Co., Darlaston, South Staffs.
The Selsdon Aero & Engineering Co., Ltd., 1, Albemarle Street, Piccadilly, W.1. "Selaero, Phone, London." Regent 1181.
Imperial Light, Ltd., 123, Victoria Street, London, S.W.1. "Edibrac, Phone, London." Victoria 3540 (3 lines).

Solder Manufacturers—
Samuel Mercer & Co., 198, Upper Thames Street, E.C.4. "Reconciled, Cannon, London." City 6342.

Sparking Plugs—
Brown Bros., Ltd., Great Eastern St., E.C.1.
Leo Ripault & Co., 1, King's Road, St. Pancras, N.W.1.
Lodge Sparking Plug Co., Ltd., Rugby. "Igniter, Rugby." Rugby 235.
The Robinhood Engineering Works, Ltd., Newlands, Putney Vale, S.W.15. Makers of KLG Plugs. "Kaelgee, Phone, London." Putney 2132-3.

Springs—
Dart Spring Co., West Bromwich. "Dart, West Bromwich." West Bromwich 322.
Terry, Herbert, & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61 (3 lines).

Steel—
Allen, Edgar, & Co., Ltd., Sheffield. "Allen, Sheffield." Sheffield 4607.
Brown Bros., Ltd., Great Eastern St., E.C.1.
Firth, Thos., & Sons, Sheffield. "Firth, Sheffield." Sheffield 3230 to 3237.
Jonas & Colver, Ltd., Continental Steel Works, Sheffield. "Jonas, Sheffield." Sheffield 4660.
Nicklin, Bernard, & Co., Birmingham. "Bernico, Birmingham." Smethwick 224.
Spear & Jackson, Ltd., Ætna Works, Sheffield. "Spear, Sheffield." Central 4522-3-4.
W. Wesson & Co., Ltd., Victoria Iron and Steel Works, Moxley, Wednesbury. "Iron, Wednesbury." Wednesbury 62

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Accumulators—

The Chloride Electrical Storage Co., Ltd., Clifton Junction, near Manchester. "Chloridic, Pendlebury." Central Manchester, 1638. Pendleton, 11.

Acetylene Welding Plant—

Acetylene Corporation of Great Britain, Ltd., The, 49, Victoria Street, Westminster, S.W.1. "Flamma, Vic, London" Vic 4830.

Imperial Light, Ltd., 123, Victoria Street, London, S.W.1. "Edibrac, 'Phone. London." Victoria 3540 (3 lines).

Aeroplane Manufacturers—

Aircraft Manufacturing Co., Ltd, Hendon. "Airmanship, Hyde, London" Kingsbury 220.

Armstrong, Sir W., Whitworth & Co., Ltd., Newcastle-on-Tyne. "Armstrong Aviation, Newcastle-on-Tyne." Gosforth 500.

Blackburn Aeroplane & Motor Co., Ltd., Olympia, Leeds. "Propellors, Leeds." Roundhay 345 (3 lines).

Boulton & Paul, Ltd., Rose Lane, Norwich. "Aviation, Norwich." Norwich 851.

British Aerial Transport Co., Ltd., Head Office: 38, Conduit Street, London, W.1. "Batigram Reg. London." Mayfair 637, 638.

Works: Hythe Road, Willesden, London, N.W.10. "Aerbrirans, Phone, London." Willesden 2272, 2273.

British & Colonial Aeroplane Co., Ltd. (The Bristol Co.), Filton, Bristol. "Aviation, Bristol." Bristol 3906.

Central Aircraft Co., High Road, Kilburn, N.W.6. "Aviduction, Phone, London." Hampstead 4403 and 4424.

Eastbourne Aviation Co., Ltd., Eastbourne. "Aircraft, Eastbourne." Eastbourne 1776.

Gosport Aircraft Co., Gosport. "Flight, Gosport." Gosport 217.

Grahame-White Company, Ltd., London Aerodrome, Hendon. "Volplane, Hyde, London." Kingsbury 120. London Office, 12, Regent Street, S.W.1. Regent 2084.

Handley Page, Ltd., 110, Cricklewood Lane, N.W.2. "Hydrophid, Crickle, London." Hampstead 7420.

Hooper & Co., Ltd., 54, St. James Street, Piccadilly, London, S.W. "Sociable, St. James, London." Regent 912.

Mann, Egerton & Co., Ltd., Norwich. "Motors, Norwich." Norwich 482 (4 lines).

Martinsyde, Ltd., Brooklands, Byfleet. "Martinsyde, Weybridge" Woking 331; Byfleet 171.

"Nieuport" & General Aircraft Co., Cricklewood, London, N.W.2. "Nieuscoat, Crickle, London." Willesden 2455.

Phœnix Dynamo Manufacturing Co., Ltd. Thornbury, Bradford. "Dynamo, Bradford." Bradford 3700 (4 lines).

Roe, A. V., & Co., Ltd., Manchester. "Triplane Manchester." City 8530-8531, Manchester.

Saunders, S. E., Ltd., East Cowes, I.O.W. "Consuta, East Cowes." Cowes 103.

Short Bros., Rochester, Eastchurch and Whitehall House, S.W. "Tested, Phone, London" Regent 378.

The Siddeley Deasy Motor Car Co., Ltd., Coventry. Coventry 954. "Deasy, Coventry."

Sopwith Aviation Co., Ltd, Kingston-on-Thames. "Sopwith, Kingston" Kingston 1988 (8 lines).

The Supermarine Aviation Works, Ltd., Southampton. "Supermarin." Woolston 37 (2 lines).

Vickers, Ltd., Imperial Court, Basil Street, Knightsbridge, S.W.3. "Vickerfyta, Knights, London." Kensington 6810.

Waring & Gillow, Ltd., Hammersmith, "Warisen, Ox, London." Museum 5000.

Westland Aircraft, Yeovil. "Aircraft, Yeovil." Yeovil 129.

White, J. Samuel, & Co., Ltd., East Cowes. "White, East Cowes." Cowes 3.

Airships—

Airships, Ltd., High Street, Merton. Wimbledon 1314.

Short Bros., Rochester, Eastchurch, and Whitehall House, S.W. "Tested, Phone, London" Regent 378.

C. G. Spencer & Sons, Ltd. (See under "Balloons.")

Aluminium Castings (Sand and Die)—

Coan, R. W., 219, Goswell Road, London, E.C.1. "Krankases, Isling, London." City 3846.

Balloons—

C. G. Spencer & Sons, Ltd., 50A, Highbury Grove, N.5. "Aeronaut, London." Dalston 1893.

Bent Timber Parts—

Hopton & Sons, George Street, Euston Square, London, N.W.1. "Hoptons, Eusquare, London." Museum 406. Also at Market Harborough, Leicestershire. "Hoptons, Market Harborough." Market Harborough 13.

Bearings (Etonia Cast Phosphor Bronze)—

Brown Bros., Ltd., Gt. Eastern St., E.C.1.

Yorkshire Engineering Supplies, Ltd., Wortley, Leeds. "Yes, Leeds" Central 3927.

Blowpipes (Oxy-Acetylene)—

Acetylene Corporation of Great Britain, Ltd., The, 49, Victoria Street, Westminster, S.W.1. "Flamma, Vic, London." Vic. 4830.

Imperial Light, Ltd., 123, Victoria Street, London, S.W.1. "Edibrac, Phone, London." Vic. 3540 (3 lines).

Bolts—

Mitchell Wedgewood & Co, Campbell Works, Stoke Newington, London, N.16. Dalston 2500 (2 lines).

Books (Aero Engines)—

Dykes' Auto Encyclopedia, Gillam, 149, Strand, W.2.

Buildings—

Boulton & Paul, Ltd., Rose Lane, Norwich. "Aviation, Norwich." Norwich 851.

Rubery Owen & Co., Darlaston, South Staffs.

Cable Coverings and Cable Controls—

The Bowden Brake Co., Ltd., Tyseley, Birmingham. "Bowden, Acock's Green." Acock's Green 103 & 104.

Bowden Wire, Ltd., Willesden Junction, "Bowirelim, Harles. London." Willesden 2400 (3 lines).

Herbert Terry & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61.

Carburetters—

Hobson, H. M., Ltd., 29, Vauxhall Bridge Road, S.W.2. Victoria 4670.

René Tampier, Bloctube Carburetter Works, Danemere Street, Putney, S.W.15.

Casein—

Nieuwhof, Surie & Co., Ltd, 5, Lloyds Avenue, London, E.C.3. "Suricodon, Fen, London." Avenue 34 and 35.

Clothing—

Burberry's, Ltd., Haymarket, S.W.1. Regent 2165.

Dunhill's, Ltd., Euston Road, N.W.1. "Dunsend, London." North 3405-6.

Component Parts—

Accles & Pollock, Ltd, Oldbury, Birmingham. "Accles, Oldbury." Oldbury 111 (4 lines).

Brown Bros., Ltd., Gt. Eastern St., E.C.1.

Central Aircraft Co., High Road, Kilburn, N.W.6. "Aviduction, Phone, London." Hampstead 4403 & 4404.

Thompson Bros. (Bilston), Ltd., Bradley, Bilston, England. "Thompson Bros., Bilston." Bilston 10.

Cords, Tapes, and Threads—

MacLennan, J., & Co., 30, Newgate Street, E.C.1. And at Glasgow. City 3115.

Dopes—

Titanine, Ltd., 175, Piccadilly, W.1. "Tetrafree, Piccy, London." Gerrard 2312.

British Cellulose Co., 8, Waterloo Place, S.W.1. "Cellutate, London." Regent 4046.

The British Emaillite Co., Ltd, 30, Regent Street, S.W.1. "Ridleypren, Piccy, London." Gerrard 280.

Cellon, Ltd., 22, Cork Street, London, W.1. "Ajawb, Reg. London." Gerrard 440.

Robt Ingham Clark & Co., Ltd., West Ham Abbey, E.15. "Oleotine, Strat, London." East 955.

Engines and Parts—

Allen, W. H., & Co., Ltd., Bedford. "Pump Bedford." Bedford No. 1.

Arrol Johnston, Ltd, Dumfries. "Mocar, Dumfries." Dumfries 281-282.

Beardmore Aero Eng, Ltd., 112, Great Portland Street, W.1. "Beardmore, London." Gerrard 238.

The Cosmos Engineering Co., Ltd., Fishponds, Bristol.

Dudbridge Iron Works, Ltd (Salmson), 87, Victoria Street, London, S.W.1. "Aeroflight, Vic, London." Vic 7026.

Gordon Watney & Co, Ltd., Weybridge. "Mercédès, Weybridge." Weybridge 550 (7 lines).

Green Engine Co., Ltd., Twickenham. Richmond 1203.

Gwynnes, Ltd, Hammersmith, W. "Gwynne, Hammersmith" Hammersmith 1910.

Napier & Son, D, Ltd., 14, New Burlington Street, London, W., and at Acton, W. "Nitrifier, London." Gerrard 8026.

Rolls-Royce, Ltd., 14 and 15, Conduit Street, W.1. "Rolhead, London." Gerrard 1654-5-6.

The Siddeley-Deasy Motor Car Co., Ltd., Coventry. "Deasy, Coventry." Coventry 954.

Sunbeam Motor Car Co., Ltd, Wolverhampton. "Moorfield, Wolverhampton" Wolverhampton 985.

The Gnôme & Le Rhône Engine Co., Ltd., 27, Buckingham Gate, S.W.1. "Elevenfold, London." Walthamstow 811 (2 lines).

Walton Motors, Ltd., Walton-on-Thames. "Motors, Walton-on-Thames." Walton-on-Thames 220.

Electrical Accessories—

Belling & Co, Montague Road, Upper Edmonton, N.18. "Belling, Edmonton" Tottenham 1084.

Brown Bros., Ltd, Great Eastern St, E.C.1

Gent & Co, Ltd., Faraday Works, Leicester. "Lodestone, Leicester" National 151 (two lines).

Johnson & Phillips, Ltd, Charlton, London, S.E.7. "Juno, London" Central 2207; London Wall 1564.

Electric Cables—

E. Kalker & Co, Coventry. "Kalker, Coventry." Coventry 24X.

Johnson & Phillips, Ltd, Charlton, London, S.E.7. "Juno, London" Central 2207; London Wall 1564.

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Mann, Egerton & Co, Ltd, 117, Cleveland Street, London, W. "Installing, Eusroad." Museum 70 (4 lines).

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The Aircraft Improvements Co., Mornington Works, Arlington Road, Camden Town, N.W.1.

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Flexible Shafts—

Herbert Terry & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61.

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Imperial Light, Ltd, 123, Victoria Street, London, S.W.1. "Edibrac, Phone, London." Victoria 3540 (3 lines).

The Auto Controller Co (Fluxite), Vienna Road, Bermondsey, Eng.

Flying Boat Builders—

Gosport Aircraft Co., Gosport. "Flight, Gosport." Gosport 217.

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Boulton & Paul, Ltd., Rose Lane, Norwich. "Aviation, Norwich." Norwich 851.

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J. A. Prestwich & Co., Northumberland Park, Tottenham, N.17.

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Moss Gear Co., Ltd., Thomas Street, Aston, Birmingham. "Mosgear, Birmingham." East 407.

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Cannon, B., & Co., Ltd., Lincoln. London Office: 110, Cannon Street, E.C.4. "Bececolin, Cannon, London." City 1206.

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Chas. P. Kinnell & Co., Ltd., 65 & 65A, Southwark Street, London, S.E.1. "Kinnell, London." Hop 372 (2 lines).

The Thames Bank (Blackfriars) Iron Co., Ltd., Upper Ground Street, London, S.E.1. "Hot Water, Friars, London." Hop 763.

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Wheeler, T., 217, Goswell Road, E.C.1.

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Aviation Insurance Association, 1, Royal Exchange Avenue, E.C.3. London Wall 9014.

Bray, Gibb & Co., Ltd., 166, Piccadilly, W.1.

Harold Townend, Ltd, 13-14, Abchurch Lane, King William Street, E.C.4. "Carinsur, London" Central 156 (2 lines).

Percy Wingfield, 22, Newgate Street, E.C.1. City 4672.

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Herbert Terry & Sons, Ltd, Redditch. "Springs, Redditch." Redditch 61.

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The British Lighting & Ignition Co., Ltd, 204, Tottenham Court Road, W.1. "Vicksmag, Phone, London." Museum 430.

The British Thomson-Houston Co., Ltd., Lower Ford Street, Coventry. "Asteroidal, Coventry." Coventry 278.

Metal Casement Manufacturers—

Henry Hope & Sons, Ltd., 55, Lionel Street, Birmingham. "Conservatory, Birmingham." Central 999 (2 lines).

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Clifford, Chas., & Sons, Ltd., Birmingham. "Clifford, Birmingham." Central 42-43: Avenue 1432.

Metals in General—

Samuel Mercer & Co., 198 Upper Thames Street, E.C.4. "Reconciled, Cannon, London." City 6342.

Metal Parts and Fittings—

Accles & Pollock, Ltd., Oldbury, Birmingham. "Accles, Oldbury." Oldbury 111 (4 lines).

Arnott & Harrison, Ltd., Hythe Road, Willesden Junction. Willesden 2207.

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Brown Bros., Ltd., Gt. Eastern St., E.C.1.

Mann, Egerton & Co., Ltd., 177, Cleveland Street, London, W.1. "Installing, Eusroad, London." Museum 70.

Rubery Owen & Co., Darlaston, South Staffs.

Sankey, Joseph, & Sons, Ltd., Wellington, Shropshire. "Sankey, Wellington, Salop." Wellington 66.

The Selsdon Aero & Engineering Co., Ltd., 1, Albemarle Street, Piccadilly, W.1. "Selaero, Phone, London." Regent 1181.

Thompson Bros., Ltd., Bradley, Bilston. "Thompson Bros., Bilston" Bilston 10.

Metric Bolts—

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Rubery Owen & Co., Darlaston, South Staffs.

Miscellaneous—

Anderson, D., & Son, Ltd. (Roofs), Belfast. "Anderson, Belfast." Belfast 1033-1034-1035.

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Herbert Frood Co., Ltd., Chapel-en-le-Frith. "Frodobrake, Birmingham." Central 203.

MacLennan, J., & Co., 30, Newgate Street, E.C.1, and at Glasgow. Tapes, Cords, and Threads. City 3115.

Motor Cars—

Arrol Johnston, Ltd., Dumfries. "Mocar, Dumfries" Dumfries 281-282.

Mann, Egerton & Co, Ltd., 370-381, Euston Road, London, N.W.1. "Manegecar, Eusroad, London." Museum 70.

Standard Motor Car Co., Coventry. "Flywheel, Coventry." Coventry 530 (4 lines).

Nameplates and Labels—

The Clegg Metal Engraving Co., Ltd., Worthing. "Clegg, Worthing."

Observation Panels—

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Oils—

C. C. Wakefield & Co., Ltd, Wakefield House, Cheapside, E.C.2. "Cheery, Cent, London" Central 11305 & 13466.

Parachutes—

E. R. Calthrop's Aerial Patents, Ltd., Eldon Street House, Eldon Street, London, E.C. "Savemalivo, Ave, London" London Wall 3266-3267.

C. G. Spencer & Sons, Ltd. (See under "Balloons.")

Piston Rings—

The British Piston Ring Co., Ltd., Holbrook Lane, Coventry. "Rings, Coventry" Coventry 1214-5.

The Standard Piston Ring and Engineering Co., Ltd., Don Road, Sheffield. "Ocean, Sheffield." Sheffield 2119.

Presswork—

Rubery Owen & Co., Darlaston, South Staffs.

Terry, Herbert, & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61.

Propellers—

The Aircraft Improvements Co., Mornington Works, Arlington Road, Camden Town, N.W.1.

Blackburn Aeroplane & Motor Co., Ltd., Olympia, Leeds. "Propellors, Leeds." Roundhay 345 (3 lines).

Boulton & Paul, Ltd., Rose Lane, Norwich. "Aviation, Norwich" Norwich 851.

Ebora Propeller Co., 11 & 12, Surbiton Park Terrace, Kingston-on-Thames. "Ebora, Kingston." Kingston 672.

Integral Propeller Co., Ltd. "Aviprop, Hyde, London." Hendon 9: Kingsbury 104.

Lang Propeller, Ltd., Weybridge. "Aerosticks, Weybridge." Weybridge 520-521.

Oddy, W. D., & Co., Leeds. "Airscrews, Leeds." Leeds 20547-8.

Westland Aircraft, Yeovil. "Aircraft, Yeovil." Yeovil 129.

Pyrometers—

The Foster Instrument Co., Letchworth, Herts. "Foster Instruments, Letchworth." Letchworth 26.

Rawhide Hammers—

Ira Stephens, Whitelands Leather Works, Ashton-under-Lyne. "Stephens, 709, Ashton." Ashton 709.

Rigging for Aircraft—

Cradock, Geo., & Co., Ltd., Wakefield, England. "Cradock, Wakefield" Wakefield 466.

Rubber Tubing & Accessories—

Hancock, James Lyne, Ltd., 266, Goswell Road, London, E.C.1. "Masticator, Isling, London." City 3811 & 3812.

Safety Belts—

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Screw-driving Machines—

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Seaplane Manufacturers—

Blackburn Aeroplane & Motor Co., Ltd., Olympia, Leeds. "Propellors, Leeds." Roundhay 345 (3 lines).

Phœnix Dynamo Manufacturing Co., Ltd., Thornbury, Bradford. "Dynamo, Bradford." Bradford 3700 (7 lines).

Short Bros., Rochester. "Seaplanes, Rochester." Chatham 627.

Supermarine Aviation Works, Ltd., Southampton. "Supermarin, Southampton." Woolston 37.

Searchlights & Landing Lights—

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Imperial Light, Ltd., 123, Victoria Street, London, S.W.1. "Edibrac, Phone, London." Victoria 3540 (3 lines).

Sheet Metal Pressings—

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Rubery Owen & Co., Darlaston, South Staffs.

Sheet Metal Work—

The Acetylene Corporation of Great Britain, Ltd., 49, Victoria Street, S.W.1. "Flamma, Vic, London." Vic 4830.

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The Selsdon Aero & Engineering Co., Ltd., 1, Albemarle Street, Piccadilly, W.1. "Selaero, Phone, London." Regent 1181.

Imperial Light, Ltd, 123, Victoria Street, London, S.W.1. "Edibrac, Phone, London." Victoria 3540 (3 lines).

Solder Manufacturers—

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Sparking Plugs—

Brown Bros., Ltd., Great Eastern St., E.C.1.

Leo Ripault & Co, 1, King's Road, St. Pancras, N.W.1.

Lodge Sparking Plug Co., Ltd., Rugby. "Igniter, Rugby" Rugby 235.

The Robinhood Engineering Works, Ltd., Newlands, Putney Vale, S.W.15. Makers of KLG Plugs. "Kaelgee, Phone, London." Putney 2132-3.

Springs—

Dart Spring Co., West Bromwich. "Dart, West Bromwich." West Bromwich 322.

Terry, Herbert, & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61 (3 lines).

Steel—

Allen, Edgar, & Co., Ltd, Sheffield. "Allen, Sheffield." Sheffield 4607.

Brown Bros., Ltd., Great Eastern St., E.C.1.

Firth, Thos., & Sons, Sheffield. "Firth, Sheffield" Sheffield 3230 to 3237.

Jonas & Colver, Ltd., Continental Steel Works, Sheffield. "Jonas, Sheffield." Sheffield 4660.

Nicklin, Bernard, & Co., Birmingham. "Bernico, Birmingham." Smethwick 224.

Spear & Jackson, Ltd, Ætna Works, Sheffield. "Spear, Sheffield." Central 4522-3-4.

W. Wesson & Co., Ltd., Victoria Iron and Steel Works, Moxley, Wednesbury. "Iron, Wednesbury." Wednesbury 62.

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Steel Tubes for Aeroplanes—

Acceles & Pollock, Ltd., Oldbury, Birmingham. "Acceles, Oldbury." Oldbury 111 (4 lines).

Tapes and Smallwares—

MacLennan, John, & Co, 30, Newgate Street, E C.1. And at Glasgow. City 3115.

Timber—

Hopton & Sons, George Street, Euston Square, London, N.W.1. "Hoptons, Eusquare, London." Museum 406. Also at Market Harborough, Leicestershire. "Hoptons, Market Harborough." Market Harborough 13.

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Thomas Parsons & Sons, 315 & 317, Oxford Street, London, W.1. "Varjap, Phone, London." Mayfair 6347 (2 lines).

Robt. Ingham, Clark & Co., Ltd., West Ham Abbey, E.15. "Oleotine, Strat, London." East 955.

Harland, W., & Son, Merton, London, S.W.19. "Harland, Wimbledon 45." Wimbledon 45 and 1395.

Naylor Bros., Ltd., Southall, Middlesex. "Naylor, Southall." Southall 30.

Washers—

Terry, Herbert, & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61.

Welding and Cutting Plant—

Acetylene Corporation of Great Britain, Ltd., The, 49, Victoria Street, Westminster, S.W.1 "Flamma, Vic, London." Vic 4830.

Imperial Light, Ltd., 123, Victoria Street, London, S.W.1. "Edibrac, Phone, London." Victoria 3540 (3 lines).

Welding Repairs—

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Wind Shields—

Auster, Ltd., 133, Long Acre, W.C. "Winflector, London." Regent 5910.

Triplex Safety Glass Co, Ltd., 1, Albemarle Street, Piccadilly, W.1. "Shatterlys, Piccy, London." Regent 1340.

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Greening, N., & Sons, Ltd., 16, Finsbury Street, London, E.C.2. "Setscrew, Finsquare, London." London Wall 1082.

Wire and Cables—

Bruntons, Musselburgh, Scotland "Wiremill, Musselburgh." Musselburgh 28.

Cradock, Geo., & Co., Ltd., Wakefield, England. "Cradock, Wakefield." Wakefield 466 (3 lines).

Wirework—

Terry, Herbert, & Sons, Ltd., Redditch. "Springs, Redditch." Redditch 61.

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Sagar, J., & Co., Ltd., Halifax "Sawtooth," Halifax." Halifax 136.

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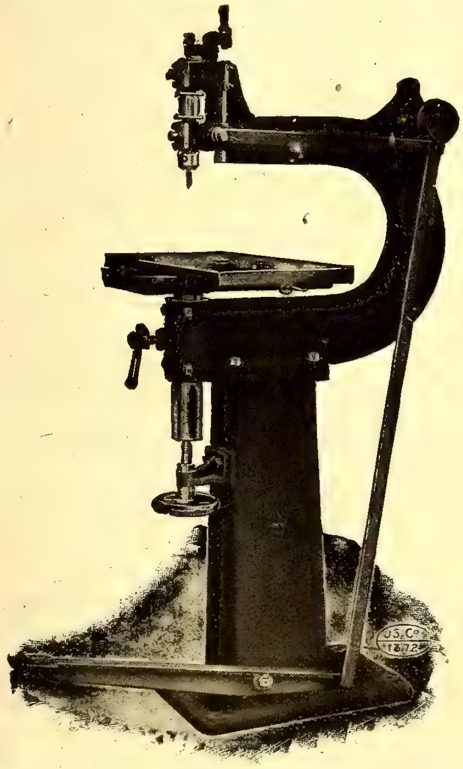

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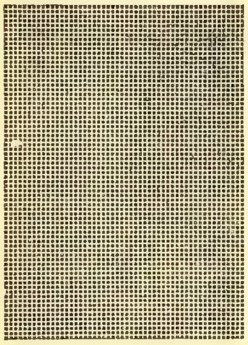

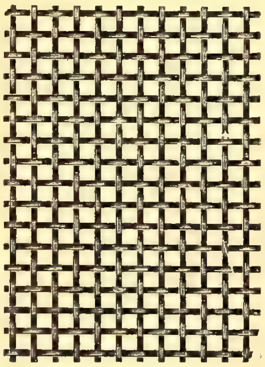

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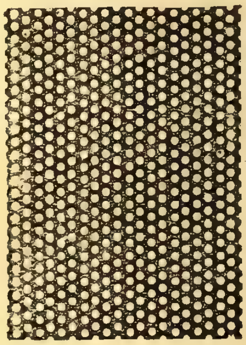

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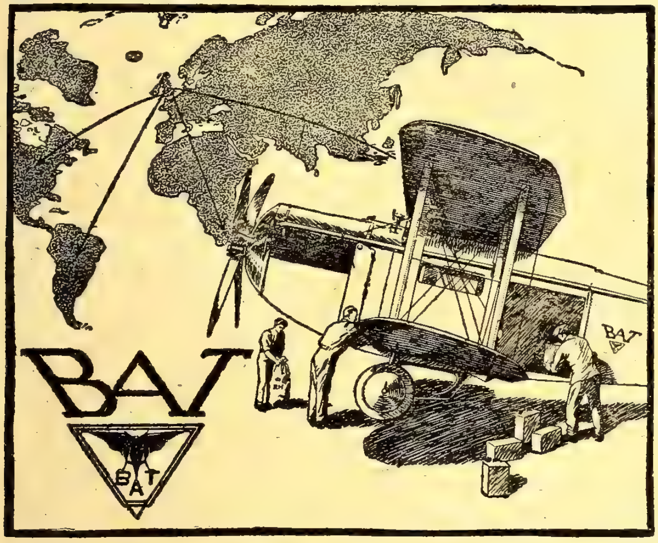

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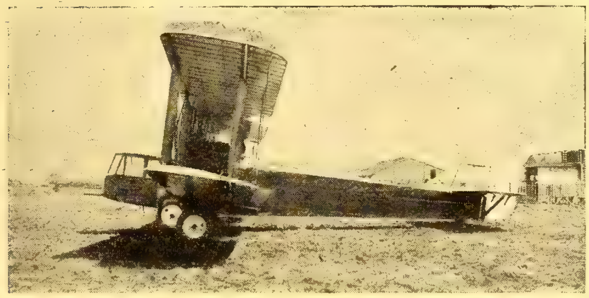

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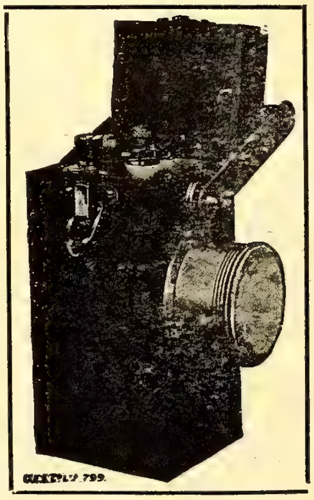

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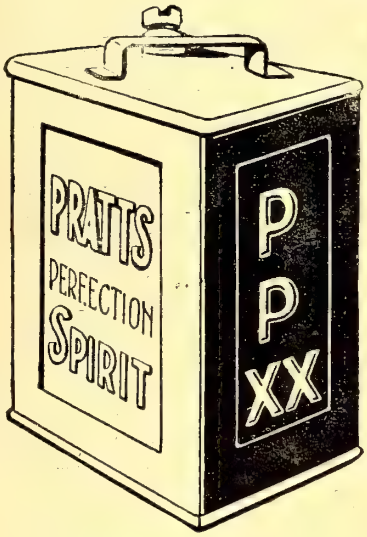

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Gap, maximum and minimum ...	4 ft. 4⅞ in.
Overall length	19 ft. 3¾ in.
Maximum height	9 ft. 5 in.
Chord	5 ft. 1½ in.
Engine type and h.p.	Le Rhône; 80 h.p.
Tank capacity in gallons	Petrol 18 galls.; oil 5 galls.
Performance—	
Speed at 10,000 feet	99 m.p.h.
Climb—	
To 5,000 feet in minutes	7 mins. 40 secs.
To 10.000 feet in minutes	15 mins. 24 secs.
Total weight of machine loaded	1,313 lbs.

THE SOPWITH "1½ STRUTTER."

The Sopwith "1½ strutter" was more or less an enlarged "Pup" and was the first British machine to be fitted with a synchronised gun, the gear being of the Sopwith-Kauper type. The pilot was also put in front and the rear or gunner's cockpit being fitted with a Scarff mounting for a Lewis gun. The "1½ strutter" was for its time an immensely efficient fighting machine and was used in large numbers by the British Air Services as well as by the French and Belgian Governments. The "1½ strutter" was also used as a single-seater bomber by having the gunner's seat removed and being fitted with a 130-h.p. Clêrget engine. The Sopwith "1½ strutter" ship-plane is still being used largely for operating from aircraft carriers and battleships.

Specification.

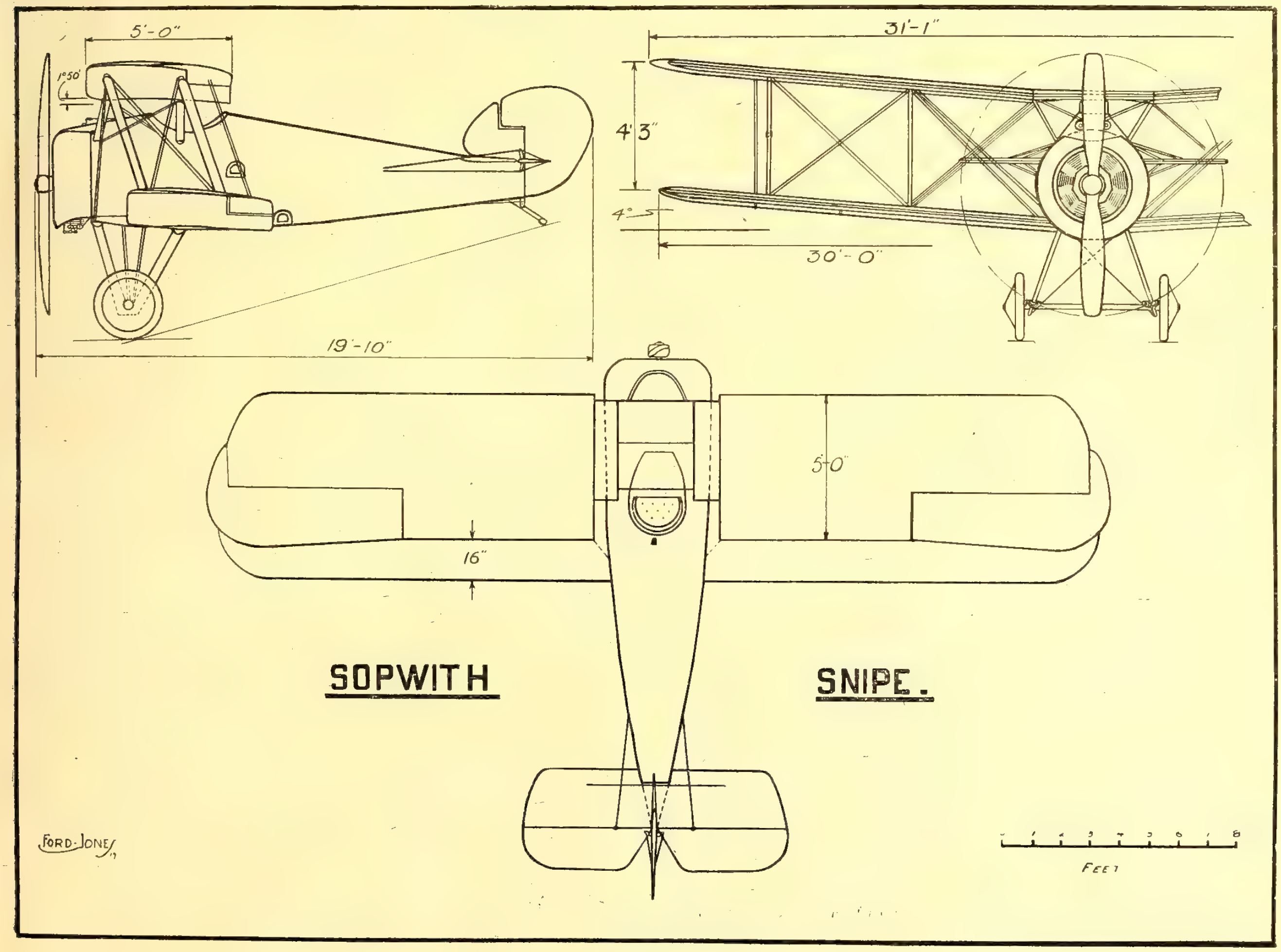
Type of machine	Two-seater tractor biplane.
Name or type No. of machine	Sopwith "1½ Strutter."
Purpose for which intended	Two-seater fighter.
Span	33 ft. 6 in.
Gap, maximum and minimum	5 ft. 5 in.
Overall length	25 ft. 4 in.
Chord	5 ft. 6 in.
Total surface of wings	353 sq. ft.
Total area of tail	57 sq. ft.
Area of elevators	21.5 sq. ft.
Area of rudder	7.25 sq. ft.
Area of fin	3.5 sq. ft.
Area of ailerons	52 sq. ft.
Engine type and h.p.	130-h.p. Clêrget.
Weight of machine empty	1,316 lb.
Load per sq. ft.	6.7 lb.
Weight per h.p.	18.8 lb.
Performance—	
Speed at 10,000 ft.	103 m.p.h.
Landing speed	35 m.p.h.
Climb—	
To 6,500 ft. in min.	12.7 min.
To 10,000 ft. in min.	24.6 min.
Disposable load apart from fuel	344 lb.
Total weight of machine loaded	2,342 lb.

THE SOPWITH "TRIPLANE."

The Sopwith "Triplane" produced in 1916 set a fashion of its own which was badly copied by many German firms, the most famous example being the Fokker D.VII. Designed with a view to cutting down the pilot's blind spots and possessing a remarkable performance in climb, the machine was, for its time, a very successful fighter. It was used by the R.N.A.S. in the land squadrons sent for service to France, and also by the French Naval Air Service.

Specification.

Type of machine	Single-seater triplane.
Name or type No. of machine	Sopwith "Triplane."
Purpose for which intended	Fighting scout.
Span	26 ft. 6 in.
Gap, maximum and minimum	3 ft.
Overall length	18 ft. 10 in.
Chord	3 ft 3 in.
Total surface of wings	231 sq. ft.
Total area of tail	23.6 sq. ft.
Area of elevators	9.6 sq. ft.
Area of rudder	4.5 sq. ft.
Area of fin	2.5 sq. ft.
Area of ailerons	34 sq. ft.
Engine type and h.p.	130-h.p. Clêrget.
Weight of machine empty	1,103 lb.
Load per sq. ft.	6 lb.
Weight per h.p.	12.4 lb.
Performance—	
Speed at 6,500 ft.	112½ m.p.h.
Speed at 10,000 ft.	106½ m.p.h.
Speed at 15,000 ft.	95 m.p.h.
Landing speed	35 m.p.h.
Climb—	
To 6,500 ft. in min.	6.5 min.
To 10,000 ft. in min.	11.8 min.



To 15,000 ft. in min.	22.3 min.
Disposable load apart from fuel	80 lb.
Total weight of machine loaded	1,543 lb.

THE SOPWITH "CAMEL."

The "Camel," perhaps the best known of British single-seater scouts, was brought out towards the end of 1916 and was more or less an improved "Pup." The installation of the 130-h.p. Clêrget and various other engines up to the 150-h.p. A.R.1, latterly known as the B.R.1, gave the machine an extraordinarily good performance. It is also interesting to note that the "Camel" was the first single-seater scout to be fitted with two synchronised machine guns.

The "Camel" was also largely used for deck flying, getting off the guns of the warships and also flying off lighters towed by fast destroyers. The edition of the "Camel" used for this purpose was known as the "Ships' Camel," and for convenience for stowage purposes the fuselage was made in two parts, the join being just in rear of the pilot's cockpit. For simplicity in joining all controls are external.

SPECIFICATION.

Type of machine	Single-seater Tractor Biplane.
Name or type No. of machine	"Camel"—F.1.
Purpose for which intended	Fighting Scout.
Span	28 ft.
Gap, maximum and minimum	5 ft. max; 4 ft. 1 1/16 in. min
Overall length	18 ft. 9 in.
Maximum height	9 ft.
Chord	4 ft. 6 in.
Engine type and h.p.	Clerget; 130 h.p.
Tank capacity in hours	Petrol 2½ hrs.; oil 2½ hrs.
Tank capacity in gallons	Petrol 26 galls.; oil 5¾ galls.
Performance—	
Speed at 10,000 feet	113 m.p.h.

THE SOPWITH "DOLPHIN."

The "Dolphin," produced towards the middle of 1917, was the first Sopwith fighting scout to be fitted with a stationary water-cooled engine, and was designed to give the pilot a large range of vision. For this purpose the pilot was brought up under the centre section, which was left open, allowing the pilot's head to protrude through the planes. A very formidable armament was designed to be fitted, but for practicable purposes it was fitted with two fixed Vickers guns firing through the airscrew and one Lewis gun on a special mounting on the centre-section tube on the left side of the pilot. Owing to the decrease in the gap and the increased span, two pairs of struts were fitted on either side of the fuselage so as to give a better angle to the interplane bracing wires. The "Dolphin" was also adopted by the French and American Governments to be fitted with the 300-h.p. Hispano-Suiza, which gave it a speed of 133 m.p.h. at 16,500 ft., to which height it climbed in 12.2 mins. Unfortunately, owing to the suspension of hostilities, this version of the machine was never used on active service.

SPECIFICATION.

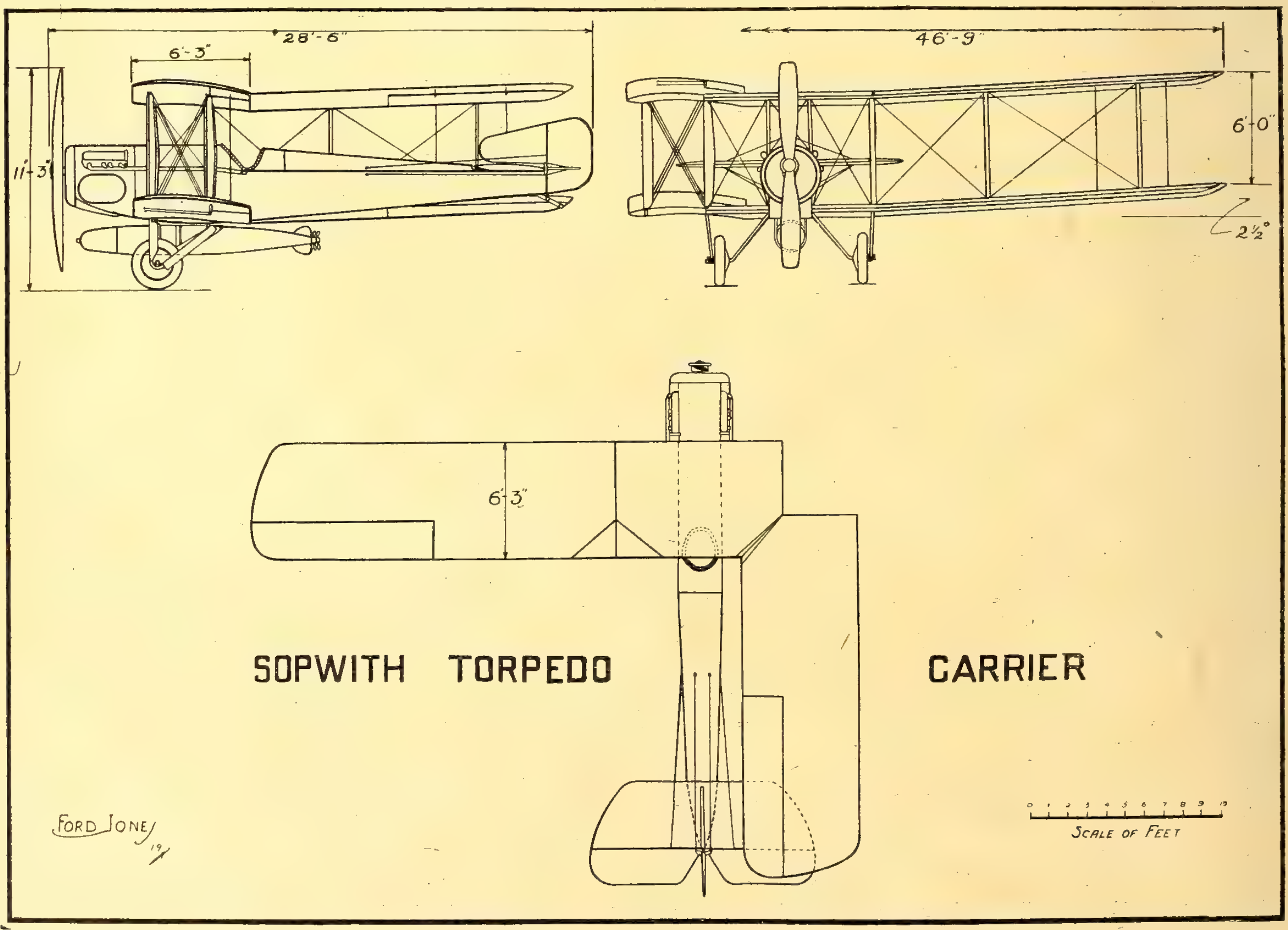
Type of machine	Single-seater Tractor Biplane.
Name or type No. of machine	"Dolphin"—5 F.I.
Purpose for which intended	Fighting Scout.
Span	32 ft. 6 in.
Gap, maximum and minimum	4 ft. 3 in.
Overall length	22 ft. 3 in.
Maximum height	8 ft. 6 in.
Chord	4 ft. 6 in.
Engine type and h.p.	Hispano-Suiza; 200 h.p.
Tank capacity in hours	Petrol 2¼ hrs.; oil 2¼ hrs.
Tank capacity in gallons	Petrol 27 galls.; oil 4 galls.
Performance—	
Speed at 10,000 feet	121½ m.p.h.
Climb—	
To 5,000 feet in minutes	5 minutes.
To 10,000 feet in minutes	12 minutes.
Total weight of machine loaded	1,959 lbs.

THE SOPWITH "CUCKOO."

In 1915 the Sopwith Co. brought out a torpedo-carrying aeroplane fitted with a 200 Canton-Unné engine. This machine was of a purely experimental nature and was not considered seriously until the Admiralty requested that further machines of the type be built. This resulted in the Sopwith "Cuckoo," which was fitted with a 200-h.p. Hispano-Suiza engine. The machine was a single-seater biplane having a divided undercarriage with no cross-axle, thus allowing for the stowage of an 18-inch torpedo under the centre of gravity.

SPECIFICATION.

Type of machine	Single-seater torpedo-carrying biplane.
Name or type No. of machine	Sopwith "Cuckoo."
Purpose for which intended	Torpedo-carrying, etc.
Span	46 ft. 9 in.
Gap, maximum and minimum	6 ft.
Overall length	28 ft. 6 in.
Chord	6 ft. 9 in.



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Total surface of wings	566 sq. ft.
Total area of tail	53.6 sq. ft.
Area of elevators	18 sq. ft.
Area of rudder	8 sq. ft.
Area of fin	5.7 sq. ft.
Area of each aileron and total area	20 sq. ft., 80 sq. ft.
Engine type and h.p.	200-h.p. Hispano-Suiza.
Weight of machine empty	1,840 lb.
Load per sq. ft.	6.4 lb.
Weight per h.p.	17 lb.
PERFORMANCE—	
Speed at 10,000 ft.	100 m.p.h.
Landing speed	40 m.p.h.
Climb—	
To 6,500 ft. in min.	14.5 min.
To 10,000 ft. in min.	26 min.
Total weight of machine loaded	3,370 lb.

THE SOPWITH "SNIPE."

The "Snipe" was produced towards the end of 1917 and was an improvement of the "Camel." The gap was reduced and the height of the fuselage increased so as to bring the pilot well up in line with the centre section, which was left open. The fuselage is circular in section, being faired so as to preserve the form of the circular cowling over the B.R.2 engine. The machine was never fully tried on active service, but the short time it was employed in France it performed extremely well. An experimental model was fitted with the A.B.C. "Dragonfly" engine by the authorities and attained a speed of 156 m.p.h. and climbed 10,000 feet in 4½ minutes.

SPECIFICATION.

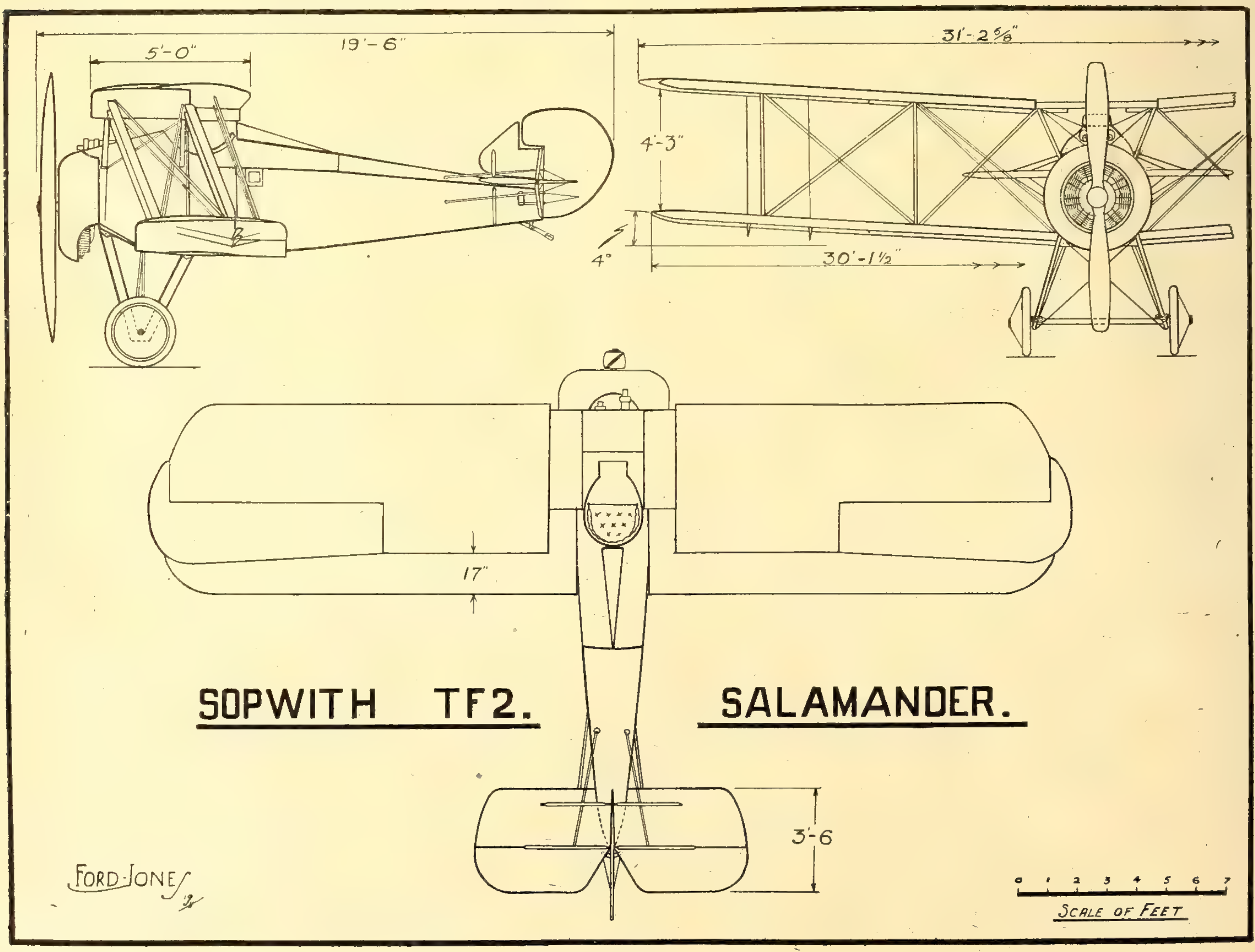
Type of Machine	Single-seater Tractor Biplane.
Name or type No. of machine	"Snipe"—7 F.I.
Purpose for which intended	Fighting Scout.
Span	Top plane 31 ft. 1 in. bottom plane 30 ft.
Gap, maximum and minimum	4 ft. 3 in.
Overall length	19 ft.
Maximum height	9 ft. 6 in.
Chord	5 ft.
Engine type and h.p.	B.R. ; 200 h.p.
Tank capacity in hours	Petrol 3 hrs. ; oil 3 hrs.
Tank capacity in gallons	Petrol 38½ galls. ; oil 7 galls.
Performance—	
Speed at 10,000 feet	121 m.p.h.
Climb—	
To 5,000 feet in minutes	3 mins. 45 secs.
To 10,000 feet in minutes	9 mins. 25 secs.
Total weight of machine loaded	2,020 lbs.

THE SOPWITH "SALAMANDER."

The Sopwith "Salamander" is a development of the "Snipe," the principal difference being that the "Salamander" was designed primarily for the more advanced form of warfare known as "trench-strafing," and as such is fairly heavily armoured. The armour plating is incorporated in the construction and extends from the rear of the engine cowling to the rear of the pilot's seat and weighs roughly about 650 lb. Two fixed guns are carried in the cowling in front of the pilot's seat. A bullet-proof streamline hump in rear of the pilot's head affords extra protection to the pilot.

SPECIFICATION.

Type of machine	Single-seater biplane.
Name or type No. of machine	Sopwith "Salamander."
Purpose for which intended	Trench fighting, etc.
Span	top 31 ft. 2⅝ in., bottom 30 ft. 1½ in.
Gap, maximum and minimum	4 ft. 3 in.
Overall length	19 ft. 6 in.
Chord	5 ft.
Total surface of wings	272 sq. ft.
Total area of tail	26 sq. ft.
Area of elevators	11 sq. ft.
Area of rudder	9 sq. ft.
Area of fin	2.75 sq. ft.
Area of each aileron and total area	12.75 sq. ft., 51 sq. ft.
Engine type and h.p.	230-h.p. B.R.2.
Weight of machine empty	1,844 lb.
Load per sq. ft.	9.4 lb.
Weight per h.p.	11 lb.
PERFORMANCE—	
Speed at 6,500 ft.	123 m.p.h.



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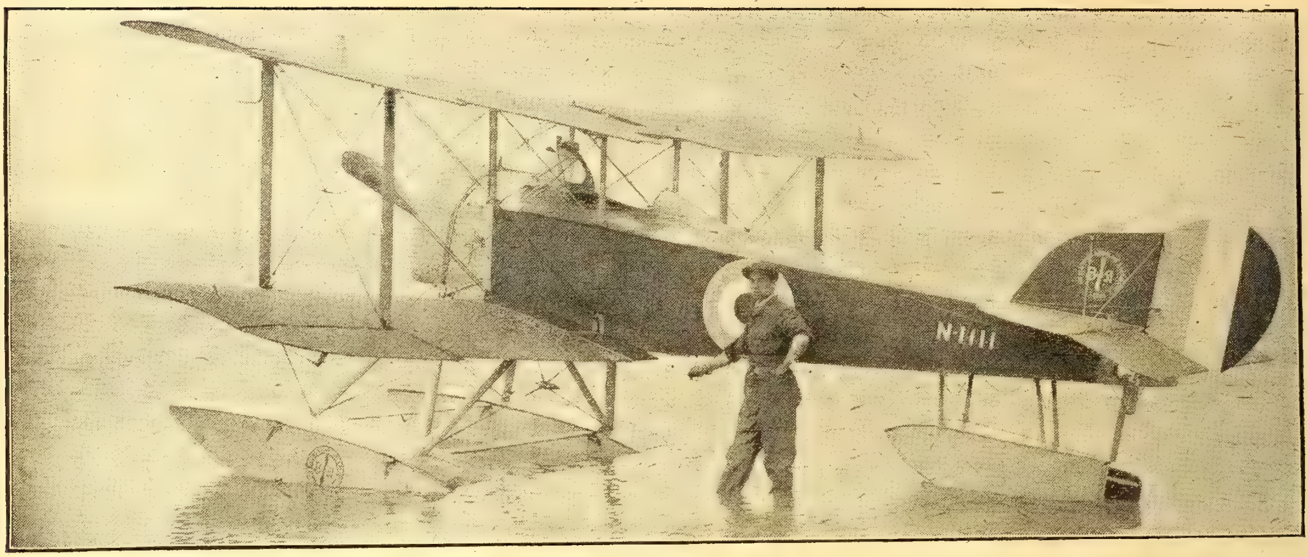


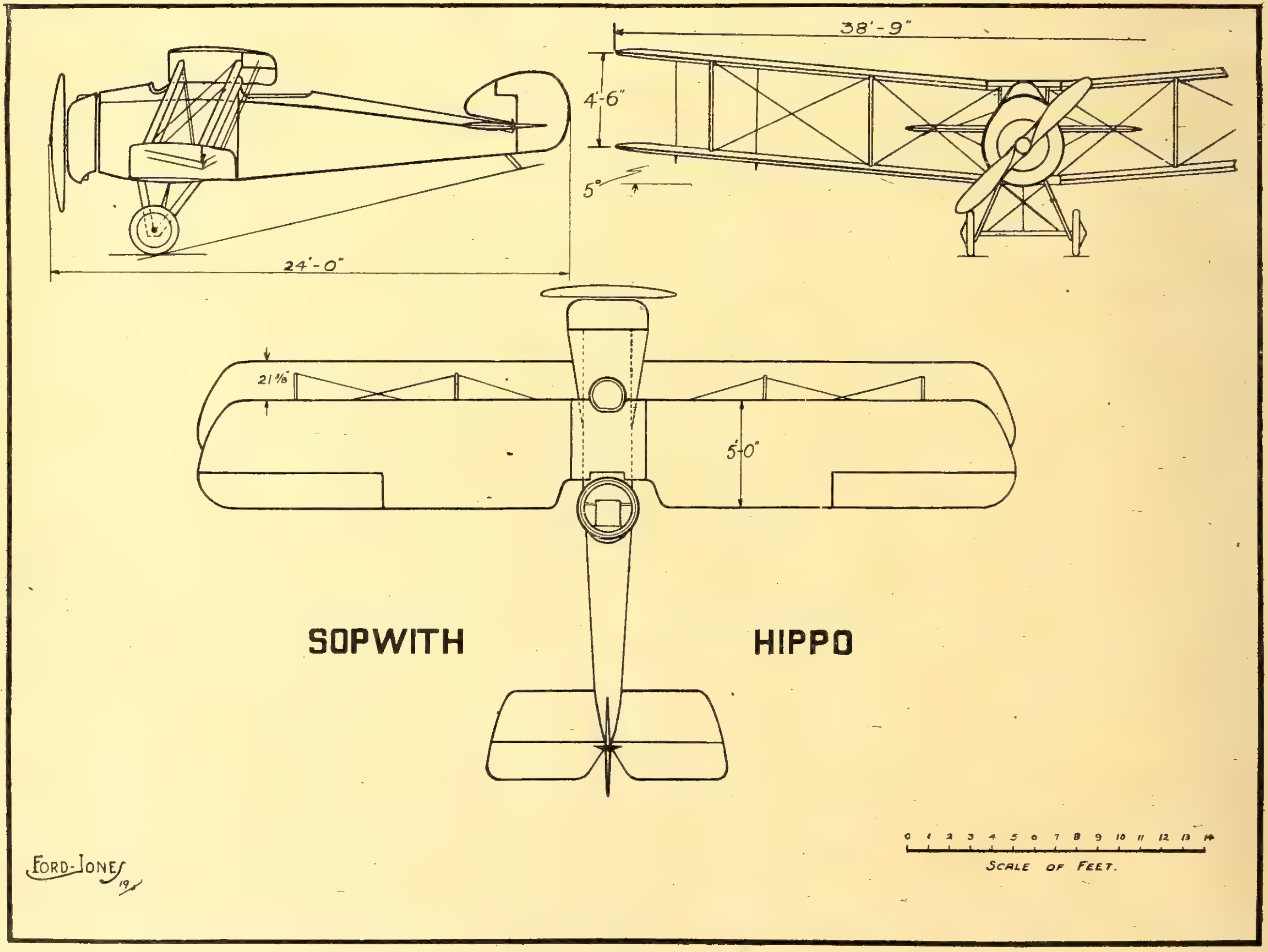
A Seaplane of the Sopwith "Baby" type with 130 h.p. Clerget engine. The machine illustrated was built by the Blackburn Aeroplane and Motor Co., Ltd.

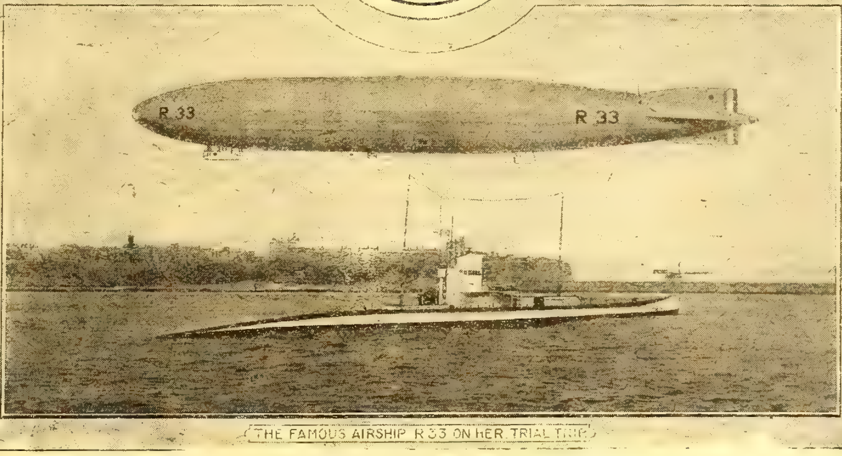
Speed at 10,000 ft.	117 m.p.h.
Landing speed	60 m.p.h.
Climb—	
To 10,000 ft. in min.	17.1 min.
Disposable load apart from fuel	410 lb.
Total weight of machine loaded	2,510 lb.

THE SOPWITH "HIPPO."

This was an experimental two-seater fighter, in which the pilot was placed directly in rear of the large 230 R.R.2 or Clêrget engine, in advance of the upper plane, which had a very large backward stagger and was placed directly on top of the fuselage. The gunner's cockpit was in rear of the upper plane. It will thus be seen that both pilot and gunner possessed a very good vision all round.

Many other experimental specimens of the Sopwith menagerie were produced during the war, about which very little is known. Mention might be made of the "Rhino," a two-seater triplane fighter fitted with a 230-B.H.P. "Puma," the "Bulldog," and the "Buffalo," both two-seater fighters fitted with the 230-h.p. B.R.2, etc.





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A GERMAN VIEW OF THE LIBERTY ENGINE.

A report by Herr Otto Schwager, published in the German paper, "Der Motor-wagen," gives a very complete account of the 12-cylinder Liberty aero-engine, based on a sample captured in a DeH.9a.

This type of engine has been described in THE AEROPLANE and the description need not be repeated, but the German comments upon the design and performance of this specimen are interesting.

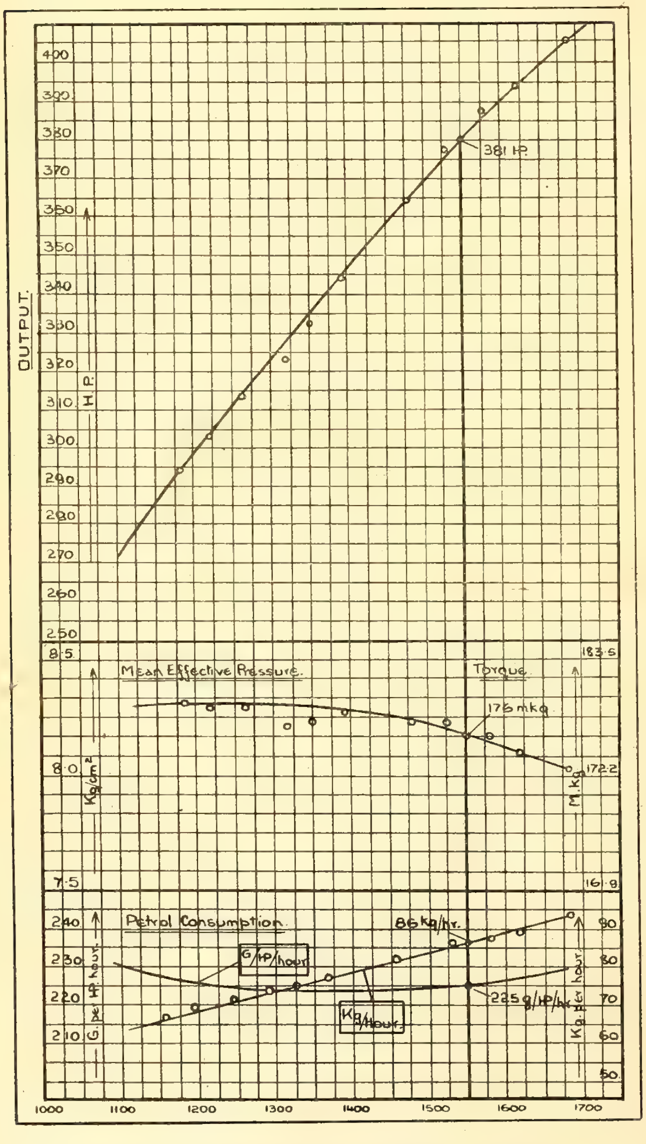
The design of the crankcase and the low weight thereof are favourably commented on, and the working pressures on the crankshaft bearings are considered to be comparatively low.

The driving of the propeller boss through a conical seating on the crankshaft end, instead if making the inner flange of the boss integral with the shaft, is considered unsuitable in an engine of such high power, but is explained by the presence of the double-thrust races which make the engine suitable for either a tractor or propeller airscrew, which it would not be possible to assemble with the solid flange.

The strength and rigidity of the connecting rods are specially noted, and the arrangement of the twin big ends, the straight-through rod running directly on the bronze bush of the forked one is given as evidence that the engine is unsuitable for running at high speeds and that it has not been intended for use in conjunction with a reduction gear. The working pressures on the big end bearings are considered to be very moderate. The loading of the little end bearings are, on the contrary, considered to be very high.

The piston design is favourably viewed—as providing ample strength and a good heat transmission from the piston head to the cylinder walls. The conical cylinder head, allowing for large valve areas, is apparently approved.

The resemblance of the overhead valve gear to that of the Mercédès naturally does not pass unnoticed.



German Test Curves of the Liberty Engine.

The arrangement of the carburetters within the V of the cylinders is considered crude—though it is admitted that the V-type presents serious difficulties in this respect.

The induction pipe system is praised—particularly in regard to the mean gas velocity therein at normal full speed.

The Delco ignition system is described in detail and is very highly commended, both on account of the saving in weight as compared with the normal magneto system, and on account of the superior reliability of the system—since even if the generator is damaged the batteries will still supply current for some hours' flying. It is also pointed out that with this ignition system it would be possible to use a single source of supply for current for ignition, lighting, wireless and heating and thus considerably simplify the electrical installation.

Comparing the weights of the Liberty ignition gear with that of the 375-h.p. Rolls-Royce, Herr Schwager gives the following table :—

ROLLS-ROYCE.		LIBERTY.	
4 Magnetos, each 6.8kg.	27.20kg.	1 Dynamo with driving connections	5.5kg.
8 Magneto brackets	4.31kg.	1 Battery	6.0kg.
1 Rear driving shaft	2.92kg.	1 Switch and field regulator	0.99kg.
1 Front driving shaft	1.34kg.	2 Contact breakers and distributors	4.87kg.
1 Intermediate shaft	0.82kg.	Insulating tube and wiring	4.12kg.
4 Spring clutches	0.78kg.	24 Plugs	2.8kg.
1 Starting magneto	2.91kg.		
1 Insulating tube and wiring	4.96kg.		
24 Plugs	2.64kg.		
Totals	47.88kg.		27.28kg.

The capacity of the circulating pump is considered to be too small, giving a low circulation velocity and therefore needing a radiator of about twice the size that would be called for in German practice.

A curve of horse-power against revolutions obtained by test is given, and the excellent form of the curve is admitted and ascribed to the carefully proportioned valve areas and to the moderate gas velocity in the inlet system. It is stated that although only 381 h.p. at 1,550 r.p.m.—instead of the nominal 400 h.p.—was obtained, yet that the legend h.p. could probably be reached at that speed were the carburation adjusted for maximum power instead of, as it actually was, for the best fuel consumption.

The weight of the engine, given as 396 kilos, with water, but without airscrew hub or exhaust manifold, is considered to be very good indeed.

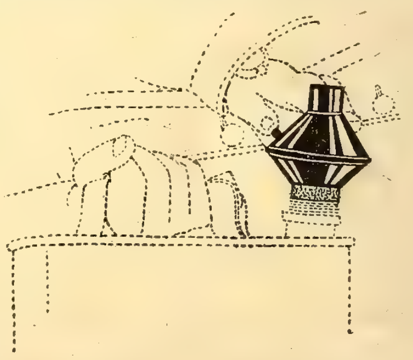
Altogether the motor is summed up as a remarkable new product, fitted with an excellent and novel ignition system, giving a very low weight per h.p., and fair petrol economy, and it is noted that this result has been attained by the use of component parts of proved design throughout.

Herr Schwager considers, however, that the engine would be considerably improved if the design of the pistons and connecting rods were improved and lightened to fit the engine for a higher speed of revolution and it were then fitted with a reduction gear.

The engine described by Herr Schwager was Liberty motor No. 709, installed in a British DeH.9a "Hyderabad No. 3" built by the Westland Aircraft Works, Yeovil.

A PETROL POURER.

Brown Brothers, Ltd., are advertising a novelty for sale. It is the "Yapp" Petrol Pourer and the illustration shows how it is fitted into a petrol can. The air inlet pipe must be fitted so that its external end faces the opposite corner of the can across the handle.



The forefinger must be kept on the air inlet pipe until the can is raised into an inverted position ready for pouring. If it is desired to stop pouring before the can is empty, it is only necessary to replace the finger.

The "Yapp" takes only thirty to thirty-five seconds to empty a two-gallon petrol tin. The petrol is filtered by a gauze in the "Yapp," which takes up considerably less room than a funnel and is far more convenient to use. The price is 5s. 6d.

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You couldn't see it from below

but it's nevertheless a fact—a fact which every flying man and aircraft manufacturer should note—that the majority of the machines competing in the Aerial Derby, including the three which were placed 1st, 2nd and 3rd, at the end of the race, were fitted with

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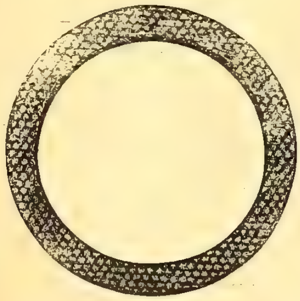

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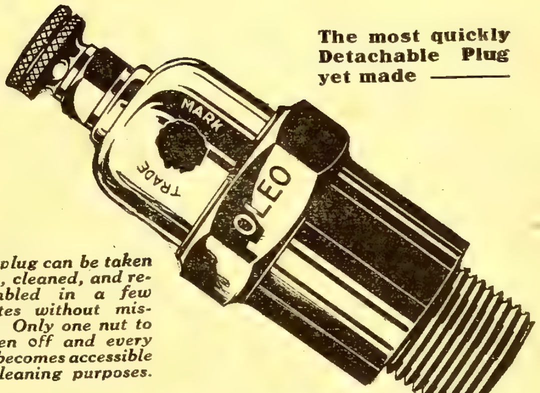

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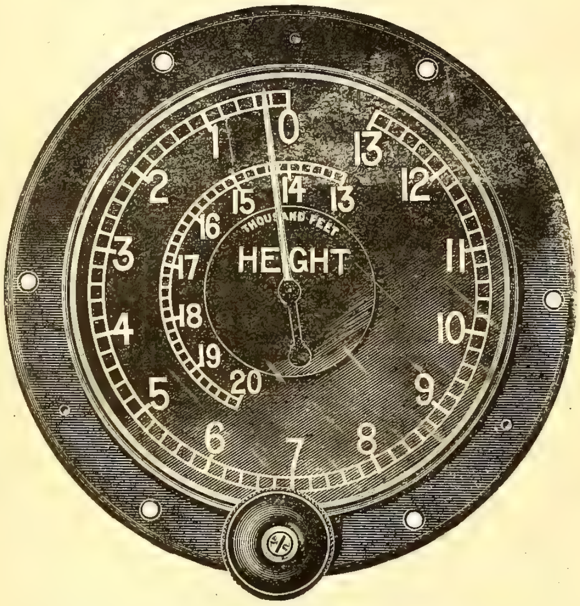

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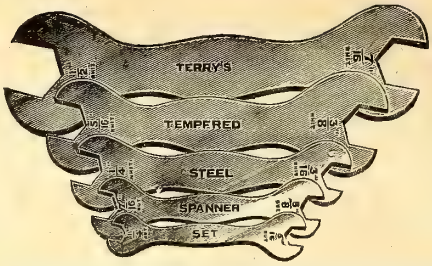

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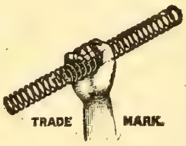

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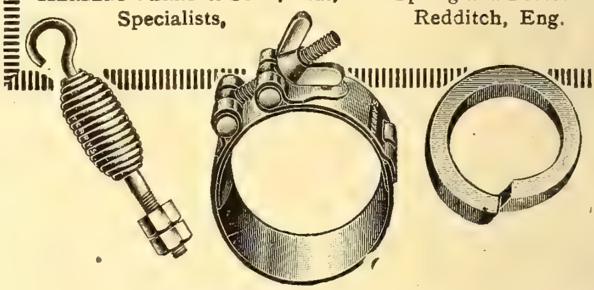

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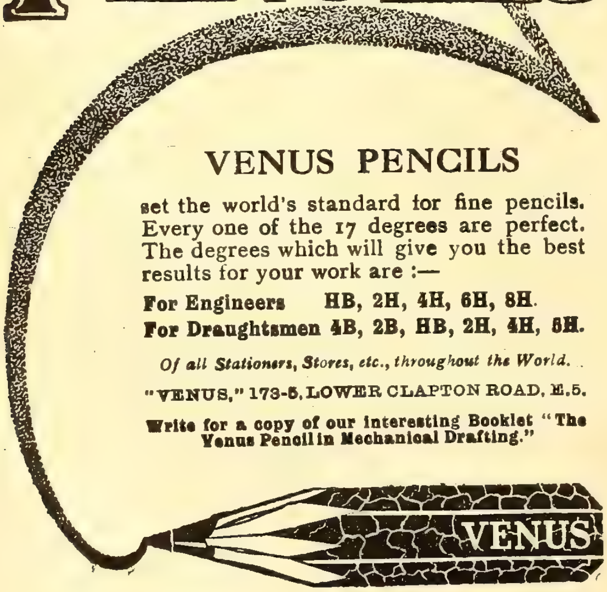

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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

STANDARD SPEECHES.

NO. 2.—THE PRESIDENT OF THE BORED WITH TRADE.

BY "MEDWAY."

A week or so back I ventured to suggest the standardising of speeches for Government officials, and gave an example of the kind of thing I recommended for an Under-Secretary desirous of handing out a little soft soap without really involving himself in anything in particular. It occurs to me that the idea might be extended to serve for other occasions of a different kind.

Lately I have been watching closely the receptions accorded to various industries when they appealed to the Government for some kind of safeguards against foreign competition. In point of fact, the Minister responsible for meeting these people and subjecting them to elementary instruction and mild ridicule, which is considered the proper treatment for their complaints, has already standardised his remarks almost completely. I can, therefore, do nothing more than take him a step farther in this direction.

I recently inflicted upon my readers a few suggestions as to how it seemed to me the Government might help to establish Commercial Aeronautics. I now imagine a deputation from the Aircraft Industry waiting upon the "President of the Bored with Trade" to advocate these or other proposals. As a preliminary, the Industry holds several serious meetings and prepares a complete memorandum which is revised and revised again until it is believed to be as near as possible perfect.

An appointment is made for the reception of the deputation. The Minister does not ask for a statement of its case to be submitted in advance so that it may be analysed and, if necessary, elucidated in correspondence. He is quite content to have the whole thing pitched at his head at top speed in an open meeting, and his power of assimilation is such that, as soon as the reading of the statement is completed, he is immediately in a position to reply to it definitely and in scathing terms. To the accompaniment of the pencils of many reporters, he sets about his unfortunate visitors as follows:—

"Gentlemen, I am more than delighted to see you here to-day, because it affords me yet another opportunity of making exactly the same remarks as I have made on several occasions during the past month. You are aware from my own statements that I possess absolutely complete knowledge of all the circumstances surrounding every industry established in this country. Before you arrived I still had an uncomfortable feeling that yours might prove to be the one and only exception. It was just possible that some member of your industry might have some idea which had not already occurred to me and been rejected as impracticable. It was most unlikely, but as I say it was just possible.

"Consequently I am glad to be in the pleasant position of being able to say to you, after hearing, at any rate, a portion of your statement, to which I confess I did not listen very closely, that you have added nothing to my store of knowledge. This happy fact enables me to squirt off at you my standard speech which has already been presented with much success before a number of most distinguished audiences.

"The Government, as you are aware, is in rather a funny position—funny, that is to say, for anyone but the Government. The function of a Government is to govern. Should it fail to remain in power, it cannot govern. Its function is, therefore, to remain in power. This can best be done by retaining the voting support of members of the House of Commons. Your proposals must, therefore, be considered solely from this point of view. This is where our standardised policy comes in. Were we to offer you exceptional treatment, other people might expect something similar. If we turn you down unmercifully, others will refrain from following in your footsteps. We shall then be able to point to the fact that the great majority of industries have made no representations to us, from which it can be fairly inferred that they are absolutely satisfied with us.

"After this perfunctory explanation of motives I will now put across you our world-famed proof that the less your money is worth the better are you off. The value of a sovereign has gone down. You may, therefore, be jubilant and contented. If we remain in power, we will see that it goes down further. One of these days we hope to arrive at that ideal position at which our currency is worth nothing at all. When this happens, nobody will try to import goods into this country. You will have the place all to yourselves. You, on the other hand, will be manufacturing aeroplanes and airships at no cost at all, since the money you will have paid for labour and material was absolutely worthless. You will therefore be able to place them upon the foreign markets at the cost of about twopence a dozen. The world will be at your feet, and your industry will flourish like a green bay-tree. This, you will observe, will be all our doing.

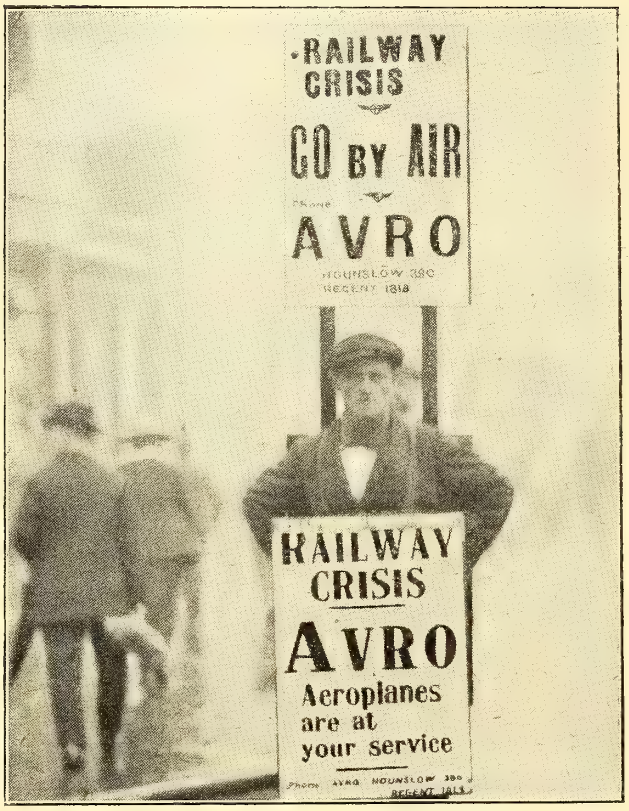
"In these circumstances it would be perfectly absurd to do anything else to help you. You may, if you like, leave with me the statement that you have so kindly prepared. One of these days I will get my secretary to read it to me, unless he has lost it in the interval. In that case I shall ask him to read me 'The Book of Revelations' or 'A Midsummer Night's Dream,' either of which will have an exactly identical effect upon my point of view and upon the desire of the Government to help your admirable industry.

"I see from your expressions that none of you have any further questions to ask, and that you are all now completely satisfied that the Government would be a born fool to do anything whatever to assist you. I shall therefore be obliged if you will consider this meeting closed, and will be most careful to mind the step when leaving!"

This little effort may strike my readers as rather far-fetched. I can assure them that, if they have occasion to go forward with any concrete proposals designed to assist the establishment of commercial aeronautics and are directed to the department I have indicated, it will be found that the reception they get will be almost identically that which I have endeavoured to indicate to them in advance.

CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.



[*Daily Mail Photograph.*

CATCHING THE TIDE.—How the Avro Company seized the opportunity of demonstrating the possibilities of Civil Aerial Transport.

THE STRIKE AIR SERVICES.

In Germany, after the end of the war, travel by train was almost impossible. The rolling stock had all got into a very bad state through the rough and hard usage it had had during the war. Many locomotives and trucks had to be delivered to the Allies, according to the terms of the Armistice.

In consequence, aerial transport in Germany began well, and services were started to the largest towns all over the country. The prices charged for flights were high. Strikes and lack of petrol lately caused many of the services to be taken off.

In England there were no such conditions to give a fillip to commercial aviation. Flying slowly developed from occasional pleasure flights to cross-Channel services. All the big aviation companies had organised their flying, and those who owned small passenger-carrying machines were looking forward sadly to a cold and unprofitable winter, when suddenly along came the railway strike, and now commercial flying is proceeding with feverish activity. There is more civil flying activity in this country now than there ever was before.

The Post Office announced on Sept. 29th :—

"The Post Office is being supplied with as many aeroplanes of the Royal Air Force as it requires, and a certain number are being placed at the disposal of newspapers, the Government realising the importance of the regular distribution of news.

"A Royal Air Force aeroplane left Kenley at 5.40 a.m. on Sept. 29th with the King's mail, landed at Newcastle-on-Tyne, and returned with other mails to Kenley by 1.40 p.m.

"The Postmaster-General has given notice that by arrangement with the Air Ministry services by aeroplane for the conveyance of letters only will be set up on and from Sept. 30th, between London and the under-mentioned towns :—Birmingham, Bristol, Newcastle, Manchester and Glasgow.

"Letters intended for conveyance by these services should be prepaid at the ordinary inland rate of postage, and, in addition, a special fee of 2s. per oz. for each letter should be prepaid in stamps at the time of posting. Such letters should be handed in over the counter at the offices shown below not later than the times stated. They will be sent out by the next ordinary delivery after arrival at the post-office of destination.

"**Time of Posting.**—General Post Office (King Edward Building), not later than 9 p.m.; Western Central District Office (High Holborn), not later than 8 p.m., Western District Office (Wimpole Street), not later than 8 p.m.

"The present service is experimental, and the arrangements will be subject to modification in the light of experience. If the service is found to meet public needs, it is hoped to extend it to other towns."

A scheme for the conveyance of urgent dispatches by aeroplane, supplemented by dispatch riders, is in operation. The scheme was worked out before the strike by the Air Ministry and the Home Office primarily for the purpose of maintaining communications with the Police Force Commissioners and other Government officials in the provinces in the event of interruption of the regular mail services.

Advantage was first taken of the scheme on Sunday for the conveyance of important dispatches to the North of England and Scotland, and other dispatches were conveyed yesterday to a number of centres throughout England, Wales, and Scotland. Dispatches for the Home Counties of the South-East of England are distributed by aeroplanes working from London. Those for the rest of the country are conveyed from London to four centres in the North Midlands and the West of England, from which they are distributed by other aircraft, or, in a few cases, by road.

At a conference on Sunday, Sept. 28th, between the Air Ministry and the Newspaper Proprietors' Association, facilities were offered by the Air Ministry for aeroplanes to carry newspapers to the provinces. This was considered unnecessary by the newspaper proprietors, but it was arranged that a machine should leave Hounslow daily at midday for Manchester, carrying urgent copy and other material needed to maintain the newspaper services of the provinces. This machine will return at once from Manchester with a similar cargo for London.

The Avro Services.

The whole of the energies of A. V. Roe and Co., Ltd., are directed to their strike flying. They are so busy looking flights and sending machines all over the country that the following is the only "official" news received :—

The sudden railway strike has produced a call from many quarters for the services of the Avros. As soon as the crisis became serious, A. V. Roe and Co., Ltd., offered to place the services of all their machines at the disposal of the Government. Pending a demand for special official services, the machines throughout the country have been very busy conveying newspapers, printing matrices, films, etc., to various towns. Special journeys of this nature have been made from Hounslow to Manchester, Bristol, Birmingham, Norwich, Cardiff, etc. Films are being carried for the London Press Cinema to Worthing, Shoreham, Brighton, Eastbourne, St. Leonards and Hastings.

On Saturday, Sept. 27th, four Avro machines left Hounslow at 6.30 a.m. for Bristol, Cardiff, Norwich, and Birmingham. They returned at 9.55, 10.30, 11.5, and 12 noon, and then left again for Rugby, Brighton, Eastbourne, and Hull. Other machines left for Worcestershire, Somerset, and other parts of the country.

According to the "Daily Mail" of Sept. 29th, three Avro machines on Sept. 27th brought people to London from Brighton, Margate, and Weston-Super-Mare, and four other machines carried passengers to Eastbourne, Rugby, Birmingham, and Newbury.

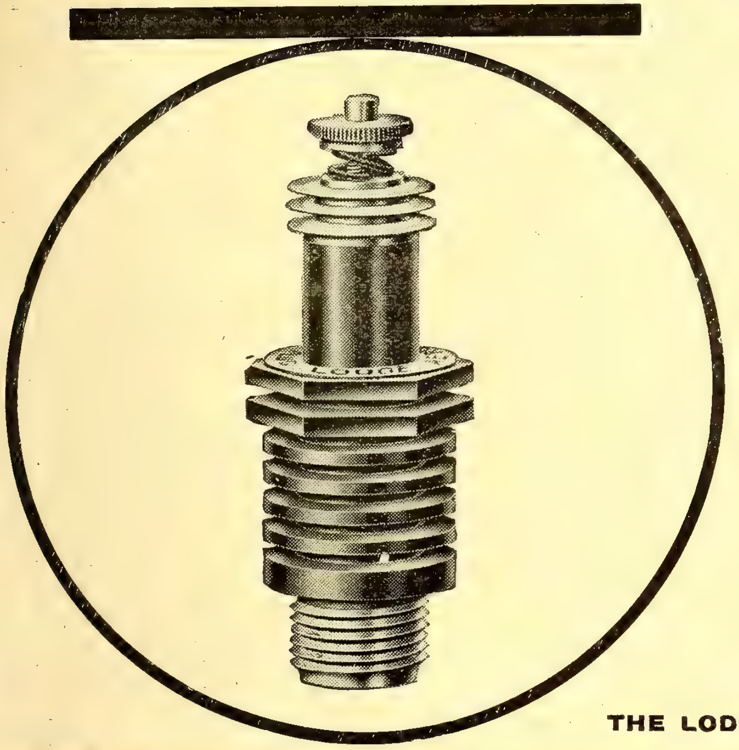
According to the "Daily News" of like date, the Avro Company are running a daily service to London from Bristol, Cardiff, and Norwich at 8.45 a.m., and from Birmingham at 9.30 a.m. These machines deliver the newspapers from London to the various towns early in the morning. A machine will leave Hounslow daily at 2 p.m. for Manchester, returning at dawn the next day.

Public Confidence.

The strike has demonstrated the results of the missionary work which A. V. Roe and Co., Ltd., have been doing throughout the summer in popularising flying in so many parts of Great Britain. People stroll in or ring up and ask for an Avro with the same easy confidence with which they would call a land taxi. In consequence the Transport Department has been snowed under with demands, and has been quite unable to meet all the calls made upon it.

What the public does not seem to realise is that the company must charge for the full journey made by the machine. If a traveller would arrange with one friend or three friends to travel together, the expense would be halved or quartered. It would be a good thing for inquirers to ask at the ticket agencies if they know of anyone else who is desirous of travelling in the same direction. In the same way inquiries might be made at the town of destination as to the chances of getting the seats booked for the return journey.

For Air Travelling



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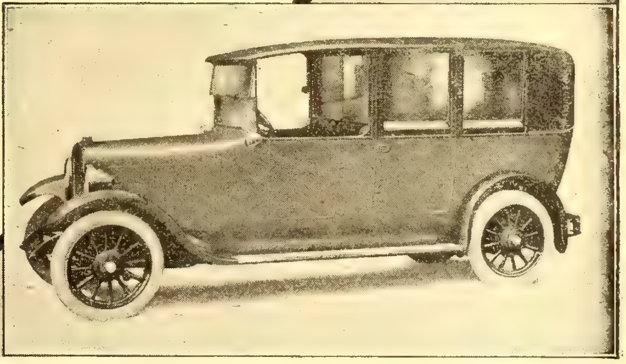
What flying has taught us—

The demand of the aeroplane for the utmost power from the lightest and most trustworthy engine, and our concentration on that problem, has taught us much—and each owner of the new Austin "Twenty" will benefit thereby.

More power with less weight and greater reliability combined with silent running, flexibility and marked economy are characteristics of the new Austin "Twenty" and assure its selection by discriminating motorists.

The new Austin "Twenty"

THE AUSTIN MOTOR CO., LTD.,
Head Office: NORTHFIELD, BIRMINGHAM
Telephone—Kings Norton 230.
Telegrams—"Speedily, Northfield."
And at London, Manchester and Paris.



Increased Services

The Postmaster-General's hand being forced by the strike, the mails were carried to Paris in two Airco machines on Monday, Sept. 29th. Aircraft Transport and Travel, Ltd., are throwing the whole of their organisation into the task of amplifying the London-Paris service. The services both ways are doubled, or even trebled. On Monday, besides the two mail-carrying machines, a D.H.16 carried four passengers and goods to Paris.

On Sept. 29th a Handley-Page machine carried the Belgian and Dutch mails. This was the first time that British mails were carried by air to those countries. Forty-five bags of mails, weighing 1,500 lbs., arrived at Hounslow at 1.10 p.m. At 1.30 p.m. they were loaded in the aeroplane, which then set off for Brussels.

On account of the strike, the Handley Page services to Paris and Brussels have been doubled, i.e., a machine will leave for both capitals every day instead of on alternate days. On Sunday, Sept. 28th, a Handley Page left Cricklewood at 8 a.m. and, after calling at Liverpool, reached Manchester at 12 noon. The machine returned to Cricklewood the next morning.

On Sept. 30th the British Aerial Transport Co. inaugurated a service between London and Birmingham. A machine leaves Hendon at 9 a.m. and 2 p.m., returning from Birmingham at 11.30 a.m. and 4 p.m.

On Sept. 29th, Major C. Draper, piloting a B.A.T. saloon-passenger machine, left Hendon at 11.20 a.m. and landed his passengers at Castle Bromwich Aerodrome, Birmingham, at 12.20. The return journey was started at 3.5 p.m., and the machine arrived at Hendon at 4 p.m.

The Supermarine Aviation Co., Ltd., of Southampton, established a flying-boat service during the week-end from Southampton to Havre. Each boat will carry two passengers and luggage.

The Blackburn Aeroplane Company were to start a regular air service between London and Leeds on Sept. 30th. An aeroplane will leave Hounslow at 12 noon for Leeds, and will carry eight passengers and 400 lb. private mails or merchandise. The fare is 15 gns. single or £30 return. A machine will leave Leeds for London at 10 a.m.

The Central Aircraft Company, at Northolt, and the Grahame-White Aviation Company, also have risen to the emergency and have a number of machines available. The latter company took passengers to Manchester on Sept. 28th, and seats were booked for Calais on Sept. 29th.

It was hoped that a Farman "Goliath" would be ready for the Paris-London service on Sept. 30th. It is reported that the British Government has made a contract with the Compagnie Générale Transaérienne for the transport of all mails for Paris, the charge for these letters being moderate and about equal to the telegraph rate.

A New Enterprise

Perhaps the Airco London-Paris services have already made business firms realise how dependable an air line can be. One shipping firm may have thought about starting an air service of their own before the London-Paris lines began, but they certainly sent goods over by the Airco service and found the quick delivery most beneficial to their business.

As mentioned in the issue of The Aeroplane dated Sept. 17th, that enterprising firm of steamship owners, shipbrokers, etc., S. Instone and Co., Ltd., have obtained an aeroplane. They bought the machine from the Air Ministry. It is a D.H.4 two-seater biplane, fitted with a 350-h.p. Rolls-Royce "Eagle VIII" engine.

Mr. A. Instone stated that the Air Ministry gave them every assistance in purchasing the machine, and are also arranging for a supply of spare parts.

Lieut. F. L. Barnard (late R.A.F.), the pilot they have engaged, made a great number of cross-Channel flights whilst serving in the Communication Squadron, R.A.F. Besides acting as pilot and carrying the goods and papers of the firm, Mr. Barnard will transact the business of the company on arrival in Paris, and maybe in Italy, when civil flying to that country is allowed, and the firm decide to send freight by air to their agents there.

An aeroplane service is particularly useful to a big shipping company. Contracts have to be made quickly, and goods and papers often have to be rushed to the ship at the last minute. In America, also, there has been a good deal of talk of saving a ship's time by letting it leave the port without the Customs manifest on board and dropping this on board when the ship has got some way out to sea.

It will be remembered that on Sept. 6th Lieut.-Col. W. D. Beatty and Lieut.-Col. W. O. Raikes, of the Air Ministry, set out for Rome on a Bristol "Fighter" and all went well until they got to within twenty-five miles of Rome when they landed and the machine was destroyed by a bush fire. They went to Italy to arrange for civil flying to that country. The people who wished to fly to that country were S. Instone and Co., Ltd.

They appear to be the first British firm, apart from aircraft concerns, to use an aeroplane for business purposes. At all events, they will own the first machine in the history of aviation to carry the house flag of a firm. One hopes that such enterprise will be copied by other firms, not only shipping concerns, but all whose business makes it necessary for them to have dealings with the continent.

The London-Paris and Brussels Air Services.

The Air Ministry made the following announcement on Sept. 27th :—

"Wireless communication has now been established between the civilian aerodromes at Hounslow (London) and Le Bourget (Paris). Messages can be transmitted between 6.45 a.m. and 7 p.m. Greenwich time. Wireless communication on this route is only available for "Air Service Messages" (viz., messages regarding arrival and departure of aircraft, weather reports, and urgent messages asking for assistance, etc.). Messages of a private or personal nature will not be transmitted.

"Information as to the handing in and delivery of messages, etc., can be obtained from the Civil Aviation Traffic Officer at the Aerodrome."

The aerial service to Paris maintained by Aircraft Transport and Travel, Ltd., has now been running for five weeks, and sixty-nine trips between the two capitals have been made.

The service was maintained last week although the weather was consistently bad and extremely unfavourable for flying.

In the table of flights made, those to Brussels by Handley Page, Ltd., have been included this week. Owing to the railway strikes, it was impossible to obtain fuller details of the Handley Page flights. Details of the flights of the Bréguet machines on the London-Paris service were also unobtainable.

By arrangement with Handley Page, Ltd., Harrods, Ltd., are having the latest fashions in dresses brought over from Paris.

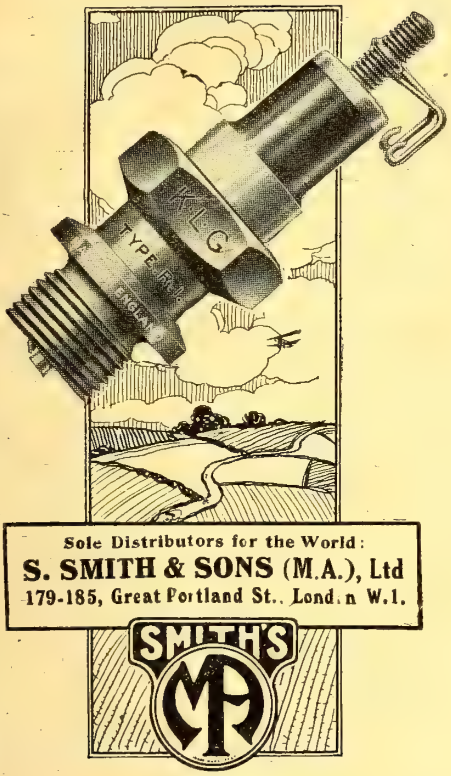
Diners at the Trocadero may book flights at the table. A neat card on each table gives particulars of the times of the services and the charges for them.

LONDON—PARIS & BRUSSELS AIR SERVICES.

Handley Page machines are indicated by H.P. and Airco types by D.H.

Date.	Type and Pilot.	Hounslow (H) to Paris (P) or Brussels (B)	Brussels (B) or Paris (P) to Hounslow (H)	Pass.	Weather.
Sept. 22nd	D.H. 4a Lt. Lawford	(H) 12.40 p.m. (P) 3.15 p m.		1	Low clouds and showers
	D.H. 4a Lt. Powell		(P) 12.30 p.m. (H) 2.38 p.m.	2	
Sept. 23rd	H.P. Capt. Clarke	(H) 8 5 a.m. (B) 10 15 a.m.		Trial Flight	
	D.H. 4a Lt. McMullin	(H) 12.35 p.m. (P) 2.50 p.m.		0	
	D.H. 9 Lt. Campbell-Orde		(P) 12.30 p.m. Marden 3.30 p.m — 5.30 p.m. (H) 6.24 p m.	0	Thick mist and rain
	H.P. Capt. Clarke		(B) 2 45 p m. (H) 6.55 p.m.	Trial Flight	30 m.p.h. head wind
Sept. 24th	H.P. Capt. Shakespeare	(H) 10.30 a.m. (B) 3.0 p.m.		9	
	D.H. 4a Capt. Baylis	(H) 12.34 p.m. (P) 2 30 p.m.		2	
	D.H. 16 Lt. Shaw		(P) 12 30 p.m. (H) 2 50 p.m.	4	
	D.H. 4a Lt. Lawford		(P) 12.35 p.m. (H) 2 55 p.m.	6	
Sept. 25th	D.H. 16 Lt. Powell	(H) 12 31 p.m (P) 2.50 p m.		3	
	D.H. 4a Lt. McMullin		(P) 12.30 p.m. landed Bahot		Very bad weather
	H.P. Capt. Shakespeare		(B) 12.15 landed Marck and Dartford (H) dusk		Gale and mist. Engine trouble
Sept. 26th	D.H. 16 Lt. Campbell-Orde	(H) 12 45 p m. (P) 3.0 p.m.		3	
	H.P.		(P) 12.0 noon (H) 4.0 p m.	6	Gale 60 m.p.h.
	D.H. 4a Capt. Baylis		(P) 12.30 p m. (H) 2 55 p.m.	0	
	D.H. 4a Lt. McMullin		Left Bahot (H) 5.25 p.m.		
Sept. 27th	D.H. 4a Capt. Carleton	(H) 12.55 p.m. (P) 3.10 p.m.		1	
	D.H. 16 Lt. Powell		(P) 12 30 p.m. (H) 2 50 p.m.	0	

Aircraft Travel and Transport, Ltd., charge for goods carried to Paris at the following rates :—



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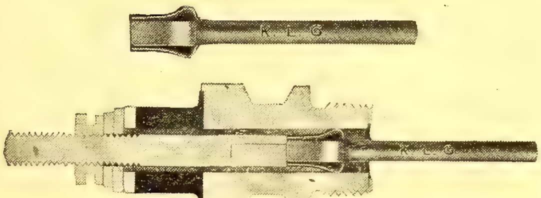

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5 per cent. reduction if carried	1 day a week
10 per cent	2 days
15 per cent	3 days
20 per cent.	4 days
25 per cent.	5 or 6 days

No single parcel must exceed 100 lb. in weight, or 160 cubic in. in cubic capacity.

Passengers—single fare to Paris—20 guineas.

Handley Page, Ltd., charge a flat rate of 2s. 6d. per lb., with a minimum of 5s.

Passenger fare to Paris or Brussels on Handley Page Passengers—single fare to Paris—20 guineas.

Cinematograph companies consign daily boxes containing urgent films on the Airco London-Paris service.

The following firms collect parcels, etc., for both the Aircraft Transport and Travel, Ltd., and for the Handley Page, Ltd., services to Paris.

Parcels for the Airco service must be at the agents by 10.30 a.m. and those for the Handley Page service by 11.15 a.m. :—

The Lep Transport and Depository, Ltd., Castle Street, Long Acre, W.C.

The American Express Co., 6, Haymarket, S.W., and 64, Queen Street, E.C.

Carter, Paterson's offices at Maddox Street, Oxford Street, W.

The following firms collect for the Airco services only :—

Hernu Peron and Co., Ltd., 98, Queen Victoria Street, E.C.

Carter, Paterson's offices at 6, Cannon Street, E.C.

The following firms collect for the Handley Page services only :—

Leopold Walford, 29, Great St. Helen's, E.C.

The Continental Daily Parcels Co., 53, Gracechurch Street, E.C.

Carter, Paterson's offices at 128, Goswell Road, E.C.

Lavington Brothers, 68, Old Bailey, E.C.

London.

Hounslow.—At dawn every morning four Avros leave Hounslow for Cardiff, Birmingham, or wherever they are wanted to go, carrying newspapers, etc. They return home by midday, and after lunch machines often leave for Manchester. One of the machines returned from Manchester to London in two hours, at a speed of 100 miles per hour, which shows that, while the comparatively low-powered engines used are economical to run, the Avros can on occasions show a very respectable turn of speed. Sir William Crossley is among those who have chartered an Avro for a journey from Manchester to London.

Lieutenant-Colonel G. L. P. Henderson (late R.A.F.), flying his own Armstrong, Whitworth biplane, with a 160-h.p. Beardmore engine, and carrying Major Lloyd as passenger, has completed a business flight to Nice and back. They started from Hounslow and arrived at Nice on Sept. 20th.

They left Nice on the evening of Sept. 23rd and came through to London with two stops. The first landing had to be made in the Maritime Alps. The second was at Le Bourget, Paris, where it took between three and four hours to fill up the petrol tanks. Hounslow was reached at 7.45 p.m. on Sept. 25th.

It should be possible to make the journey to Nice within twenty-four hours but for the bad arrangements at the landing grounds on the route. The journey proved the reliability of the aeroplane for that sort of journey. Col. Henderson stated that it was not necessary to undo the engine covering during the ten days that he was absent from London.

Major Stuart-Wortley (late R.A.F.), flying an Airco D.H.4a, left Hounslow at 1.10 p.m. on Sept. 24th for Interlaken (Switzerland). He will give a series of demonstration flights there.

Brooklands.

The aircraft firms in the Weybridge district are jealously guarding their secrets as regards the construction of new types of aeroplanes.

The Air Navigation Company (Blériot's) of Addlestone are at present turning out light cars, and little information is to hand concerning their programme as regards aircraft.

Vickers, Ltd., of Weybridge, are finishing a contract for "Vimy" bombers, after which it is expected they will construct "Vimy" Commercial machines.

The Lang Propeller Company are now building boats of all descriptions in addition to their famous airscrews.

Pilots have been particularly active at Brooklands during the past week (ending September 13th). Machines in the air at different times were a "Vimy" bomber, the Martinsyde Australian machine (which has a pleasing appearance in the air, and is painted all over grey), sundry Sopwith "Snipes," "Doves," and "Gnus," a Bristol fighter and one of the "famous" S.E.5s

Machines also passed over from other aerodromes, and an O/400 Handley Page proved a striking contrast to a Martinsyde F.4 which gambolled above the huge and steady-going "twin."

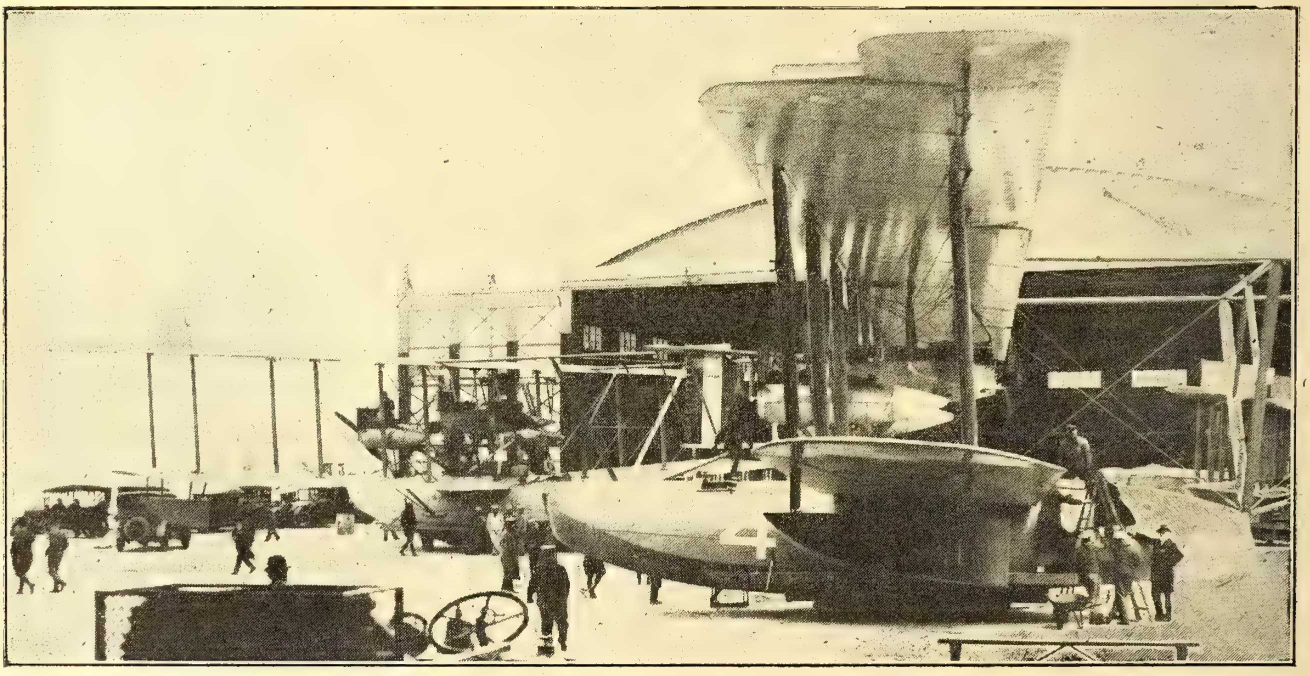
According to local papers the track at Brooklands is to be repaired shortly, and made ready for the next season's motor racing, and the R.A.F. having by then, one hopes, departed, Brooklands will doubtless return to its pre-war position as one of the homes of aviation and motoring.—J. F. S.

Doncaster.

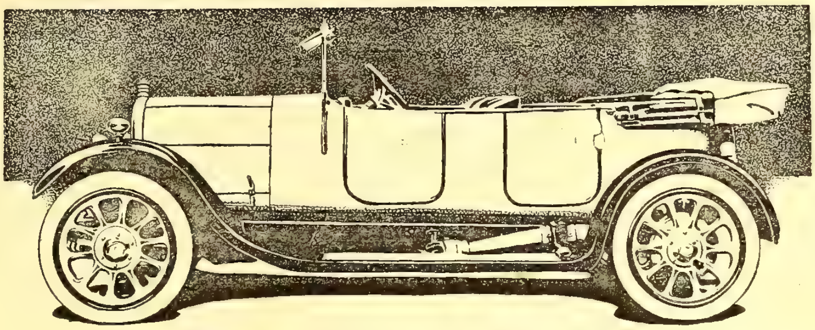
That the Doncaster aerodrome is to be relinquished by the R.A.F. and will not be retained as a civil landing station is bad news for the town. It was expected that the flying ground would be an important feature in the development of the district.

Nottingham.

Lieut. Macrae, M.C. (late R.A.F.), and his travelling circus of Avros have been at Nottingham during the past week, but previous to the outbreak of the strike the weather was not very favourable for flying. When the strike came fine weather returned, and the Avros got busy. One journey was made to Grantham and Lincoln. The local representative of Messrs. Boots and a supply of drugs were carried The latter were delivered at shops in both Grantham and Lincoln within an hour of the start.



A side view of the N.C.4, which flew from the U.S.A. to Plymouth via the Azores in June. The photograph gives an excellent idea of the size of the craft. A few such boats would be useful for passenger work between Newcastle, Hull, and London at present.



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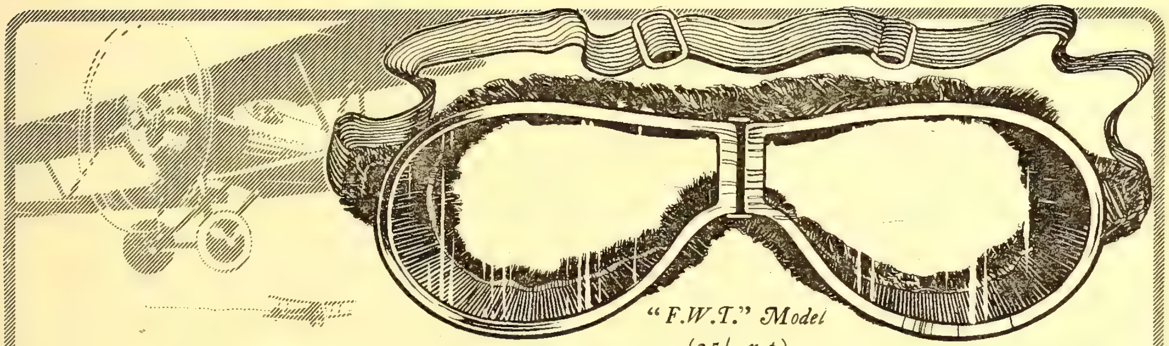

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Sheffield.

On Sept. 18th over 200 people witnessed 19 passenger flights in an Avro machine at the Coal Aston aerodrome. Ten of those passengers were winners of the "Yorkshire Telegraph and Star" free flights. One of the winners had bought 20 copies of the paper in order to stand a good chance of a flight.

On Sept. 20th, the only other day that flying was possible during the flying week, on account of the weather, 17 passengers were taken up. Ten free flights were given by the "Sheffield Daily Telegraph."

The flying week being over, Capt. Lewis (late R.A.F.), and his party left Sheffield for London on Sept. 21st.

If Mr. Lloyd George flies to Sheffield for his visit on Oct. 14th he will probably arrive on a Vickers-Vimy "Commercial" machine.

IRELAND.

Information was received in Belfast on Sept. 24th that a Handley Page aeroplane, built by Harland and Wolff, had accomplished its 650 miles journey from Aldergrove, Co. Antrim, to Folkestone in 4 hrs. 18 min. This gives the machine an average speed of 140 m.p.h.

[No statement is made as to the direction and velocity of the wind, nor as to the fate of the machine after delivery at Hawkinge.—Ed.]

AFRICA.

South.

Some reference was made in the issue of The Aeroplane for Sept. 10th to the activities of Col. Armes (late R.A.F.), and Major Miller (late R.A.F.), in South Africa.

According to the "Daily News" of Sept. 25th the service between Johannesburg and Pretoria is hoped to be started on Oct. 1st. Both those towns have excellent aerodromes, and are stations on the Cape-Cairo air routes. Three machines have already arrived at Capt Town for the air service.

West.

Two French aviators will shortly make prospecting flights from Dakar to Timbuctoo, and from Dakar to French Guinea and back.

THE ARGENTINE.

The Argentine Government is interested in the acquisition of seaplanes for possible mail service. The few machines which have been exhibited at Buenos Aires have proved to be unsatisfactory. Exhibition flights are being given by European companies.

AUSTRALIA.

An inspection of the Malayan Archipelago was recently made by Mr. M. Anderson, of Aerial Service, Ltd. (Australia). He declared that the London-Australia flight is only practicable if the route follows a series of landing stations at every available site in Asia.

Darwin, in the Northern territory of South Australia, is covered with dense jungle or loose rocks The making of landing stations in that district would take some months.

The Australian end of the Archipelago presents the most serious obstacles. Between Darwin and Sydney low bush covers a great deal of the ground. Mr. Anderson stated that the safest time for the flight is in the summer.

DENMARK.

The Danish correspondent of The Aeroplane writes :—

It is reported from Copenhagen that the commercial aviation company, Dansk Luftexpres, which will be remembered to have made a start with German Sablatnig land-going aircraft, is preparing a Copenhagen-Gothenburg-Frederikshavn (or Skagen) service with 10 Friedrichshafen seaplanes. The single-trip fare will cost 200 crowns (about £11). The Swedish consent for establishing a seaplane base in Gothenburg is being sought.

FRANCE.

A correspondent of The Aeroplane writes from France :—

The Paris-Lille, Paris-Brussels, and Paris-Cabourg (for Deauville and Trouville) air services cease working as daily services after the end of October. During the winter they will only be worked when and as required.

The Charges for Air Transport

Passenger fares for French aerial transport services next year are to be fixed, it is reported, at 50 centimes per kilometre—roughly, 8d. per mile. This charge covers 10 kilogrammes of personal luggage.

In a straight line the distance Paris-London is 350 km. approximately, and at the above rate the fare would be 175 francs—£7 at pre-war exchange rates—or a little under £5 at the present rate. This figure, of course, is the result of the French Government's efforts to assist commercial enterprise in an intelligent manner.

Comparing this figure with the rates quoted by British aerial transport concerns it would appear that the efforts of the Department of Civil Aeronautics, of the Air Ministry, entirely to suppress British aerial enterprise are likely to be crowned by a very early success.

Some French Experiments.

French activity in the matter of man-propelled aircraft appears to be on the increase.

Poulain—backed by the French Nieuport concern—is again to attempt to win the Peugeot prize, this time with an airscrew drive added to his flying bicycle.

An aviette has been designed by M. de Monge, of the Lumière Propeller concern, for a well-known French acrobat who has the habit of looping on an ordinary " push " bicycle. It is not yet proposed to loop the aviette, however.

The machine is to be a variable surface biplane driven by a Lumière Propeller, and the pilot—in a prone position—is totally enclosed in a streamline fuselage.

In addition, M. Mamet has in course of construction a pedal-driven biplane upon which he hopes to astonish the world. As the total weight is given at 185 k.g. (407 lb.), seems improbable that he will succeed—at any rate, in the intended manner.

M. Damblanc has a helicopter nearly ready for trials and for exhibition at the Aero Show. This machine is said to be a really serious effort, having received the approval of the French " Section Technique." It is also stated that the calculations regarding the apparatus are vouched for by an eminent French mathematician and that the machine may be expected to perform.—J. S.

The Salon Aeronautique.

The following firms are a few who have signified their intention of exhibiting at the VIe. Salon Aeronautique to be held in Paris in December. De Marçay, Caudron, Farman, Latécoère, Bréguet, Levasseur, Lioré et Olivier, A. Bernard, Nieuport, Morane, L. Clement. This list is not complete, as many other firms have promised to exhibit this year.

GERMANY.

The Danish correspondent of The Aeroplane writes :—

One of the first German pilots, Brunnhuber by name, years ago put up a four-passenger carrying world's record in a 50-h.p. Gnôme-engined Albatros-built Farman box-kite. He was engaged (afterwards) as chief instructor at the German military aviation centre at Doberitz. Evidently, either he was thrown out of the job or preferred to leave under the present conditions prevailing in German military aviation places, as he has accepted a position as aero chauffeur to two people owning aeroplanes. The other day he returned by air in this capacity to Johannisthal from one of the seaside resorts.

A New Airship Service.

According to the "Daily News" of Sept. 27th, a Zeppelin service between Berlin and Stockholm has been arranged jointly by the Deutsche Luftschiffahrts-Actiengesellschaft and the Swedish Air Traffic Company. The airship "Bodensee" will be used on the service, and the fare for the trip is expected to be about £25.

The paper also states that an American mission recently travelled in the airship from Berlin to Friedrichshafen to inspect the Zeppelin works and to discuss the suitability of this type of airship for commercial work in America.

A Flight.

A correspondent writes from Holland :—

The properties of the well-known aeroplane manufacturer, Fokker, have been confiscated by the tax authorities at Schwerin, as Herr Fokker has left Germany without paying the 14,000,000 marks which he owed for taxes. Herr Fokker is of Dutch birth. He is said, however, to have become a German citizen before the war.

According to the " Berliner Zeitung am Mittag," Herr Fokker is said to be still a Dutchman. This paper says further, that Herr Fokker, who is at the present moment in England, has told English journalists all kinds of fairy stories about new inventions which he said he had made shortly before the end of the war, which were much worse than any previous horrible inventions of similar kind.

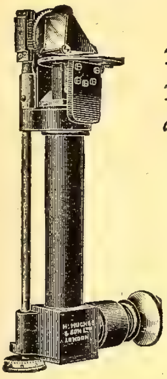
On inquiry at the British Consulate at Rotterdam one found they did not believe for a moment that Herr Fokker was in England.—N. C.

HOLLAND.

A correspondent writes from Holland :—" There is shortly expected in Holland a large flying machine of the Deutsche Luftschiffahrt Reederei. The machine will probably land on the E.L.T.A. ground or at Soesterberg. This visit is connected with the discussions now going on as to a regular service from Holland to Denmark via Germany.—N. C.

INDIA.

A Reuter's message from Simla, dated Sept. 24th, stated that the Government of India are advocating the formation of a big company, independent of any aircraft construction com-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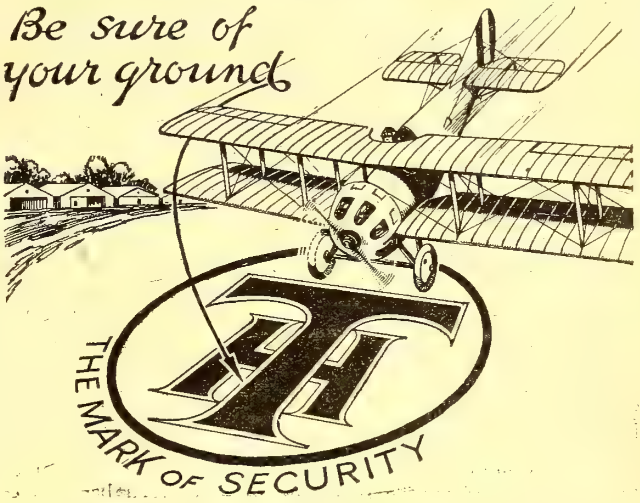

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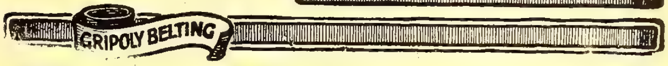

pany, with a monopoly for the carriage of mails for 10 years on the same lines as the P. and O.

The Board to advise the Commerce Department has sanctioned the proposal to establish aerodromes at Calcutta, Bombay, Karachi, Nagpur, Madras, Rangoon, Singapore, and Delhi.

ITALY.

The Italian correspondent of The Aeroplane writes :—

On Aerial Mails.

Two seaplanes left Brindisi for Athens a few days ago, arriving safely, though one had to stop for adjustments at Patras. Presumably the flight was undertaken in view of the mail service to be started sooner or later.

The Sardinian Postal Authorities are running regular inland postal services between Terranova, Sassari, Caglieri, and Macomer. Similar linking up of the interior of Sicily is officially announced, and a direct Rome-Turin express mail is likely to be started even quicker than its best friends dreamed owing to the telegraph people's discontented state of mind.

Landing-ground Alterations.

A high personage in the Air Ministry, interviewed by the "Corriere della Sera," is quoted as suggesting much longer taking-off places or the supplementing of present ones by small additional levelled places in line with the main aerodromes. This is to avoid the recent most frequently fatal results of engine failure before altitude has been attained, which generally causes the pilot to try to turn back to the aerodrome.

A Dutch Purchase.

The same H.P. mentions the imminent purchase of a whole seaplane squadron by Holland—probably the mixed Macchi and Savoia which left for that country recently.

The Verona Disaster.

I was present at the commemoration of the five Press representatives who lost their lives in the Verona crash at the Ansaldo aerodrome at Turin. The Hon. Montu, President of the Italian Aero Club, etc., etc., addressed us at length on the future, sparing neither the performing pilots nor the highest authorities. He announced the advantage of having Milan papers at Rome a day earlier than the train could get them there during the recent newspaper strike, and also the institution of an annual competition on a fixed course which the Government is said to be arranging.

Flying services with passengers are being held up considerably as a consequence of the recent disasters. On the other hand, papers and express matters will receive the benefit of the space occupied by Pressmen and enthusiasts in the past. The Milanese papers are reaching Rome a day earlier, for instance, and Turin is receiving express letters half a day earlier. One is inclined to think that the public will appreciate these material advantages more than glowing newspaper accounts of aerial travel.—T. S. H.

SPAIN.

Capt. Truelove and his red and yellow Avro have arrived safely in Spain. General Echague, commanding the Spanish Flying Corps, has been taken up by Capt. Truelove and much enjoyed his flight. He displayed great interest in the type of machine on which the British fighting pilots were trained. It is understood that His Majesty King Alfonso is acquiring this Avro.

SWEDEN.

The Danish correspondent of The Aeroplane writes :—

From Stockholm is reported that the Swedish Government has been offered a great number of British Government property aeroplanes, being new aircraft of an original cost of £1,800 each, and to be sold now at half price. The English Government is stated intending altogether to dispose of 10,000 aeroplanes.

SWITZERLAND.

An aviation meeting at Neufchatel began on Sept. 15th and ended on Sept. 22nd. Many French aviators took part, and the proceedings were attended by thousands of spectators.

Captain Bradley, on an 110-h.p. Le Rhône Avro biplane, recently arrived at Lausanne from London, having flown *via* Paris and Dijon. He crossed the Jura Alps and suffered greatly from the cold. He landed safely at Lausanne, where the machine was purchased by the Swiss Aero Club.

UNITED STATES OF COLOMBIA.

An experimental aerial mail service has been inaugurated between Barranquilla and Puerto Colombia, United States of Columbia (South America). It is reported that a special issue of aerial postage stamps, restricted to 200, has been sanctioned by the State in connection with the service.

UNITED STATES OF AMERICA.

The New York-Toronto Air Race.

The order of finishing and the flying times of the contestants in the American Aerial Derby of 1,042 miles are now available, and are as follows :—

Lieut. B. W. Maynard, D.H.4, 465¼ min.
Lieut. H. H. George, D.H.4, 540¾ min.
Lieut. D. B. Gish, D.H.4, 524¼ min.
Col. G. C. Brandt, D.H.4, 545¼ min.
Lieut. M. J. Plumb, D.H.4, 550¾ min.
Lieut. P. H. Logan, Le Père, 562 min.
Lieut. Ben Adams, D.H.4, 564 min.
Lieut. John P. Roullot, D.H.4, 570¼ min.
Major R. Schroeder, V.E.7, 572 min.
Serjeant C. B. Coombs, D.H.9, 576 min.
Col. H. E. Hartney, S.E.5A, 589¾ min
Lieut. R. T. Midkiff, D.H.4, 597½ min.
Lieut. Ross Kirkpatrick, D.H.4, 602¼ min
Lieut. C. F. Brown, D.H.4, 607¾ min.
Lieut. Charles Colt, S.E.5A, 621½ min.
Lieut. F. T. Honsigner, D.H.4, 635 min.
Roland Rholfs, Oriole, 667¼ min.
Capt. C. W. Cook, Fokker, 759½ min.
Major A. B. Gilkeson, D.H.4, 764¼ min
C. S. Jones, J.N.4D, 833½ min.
Lieut. W. R. Taylor, J.N.4H, 836½ min.
Capt. H. B. Chandler, J.N.4H, 895¼ min.
Capt. R. H. Depew, J.N.4D, 898½ min.
Capt. S. S. Moore, Can. J.N.4, 912½ min.
Lieut. L. W. Bertrand, Can. Trng., 1,285¼ min.
Lieut. Wallace Young, J.N.4H, 1,313½ min.
Col. Wm. C. Barker, Fokker, 1,434½ min.
Lieut. C. A. Schiller, Can. J.N.4, 1,520¾.
Major J. W. Simons, D.H.4, 1,536¾.
O. S. Parmer, Standard, 3,323 min.

It says much for the speed and general excellence of the D.H.4 machines, fitted with Liberty engines, that they obtained the first five places, also the seventh and eighth, and had a very good record throughout the race. It seems strange that they could beat the S.E.5s, and also the two Fokkers, of which a great deal more was expected than that one would come in at the end of the race, and the other in the middle.

[But to those who know the real speeds of the much-advertised S.Es. and Fokkers it is quite natural.—Ed.]

The civil pilot who made the best time and gained the $10,000 was Roland Rholfs, who came in sixteenth in the race, and was flying a Curtiss Oriole. On starting from Toronto, Rholfs turned an Oriole machine on its back and delayed the start. There were 52 entries for the flight and 28 finished the course. Three pilots made second starts after failing in the first attempts.

Seaplane Tours.

A conference was held recently at the Curtiss Flying Station in Atlantic City to discuss plans for seaplane cruises. Capt. Charles J. Glidden and Mr. Henry Woodhouse, high officials of the Aerial League of America, were present.

Among the seaplane tours announced by Capt. Glidden will be cruises from Atlantic City to Baltimore, Washington and Norfolk, and from Atlantic City to Florida and the Gulf. Other cruises will visit New England ports, while others will follow the Mississippi and other great American rivers.

Seaplane cruises from Atlantic City to New York and up the Hudson will be among the first to be organised. Capt. Glidden also announced that winter cruises on the Pacific and Gulf Coast will be organised this year.

According to the "Times" of Sept. 29th :—Tentative plans are now under consideration for a seaplane flight from San Diego (California) to the Philippines, via Hawaii and Wake Island (north of the Marshall Islands), and Guam.

New Air Routes.

The Curtiss Aeroplane and Motor Corporation will establish shortly three new passenger air routes. A service from New York to Rochester may be started in the autumn. The other two routes, which will probably open next spring, are between Erie and Pittsburg and Hamilton and Toronto in Canada.

The Aerial Mail Service.

The most difficult part of the route of the mail service has been found to be over the mountains from New York to Bellefonte (Pa.). Early morning ground fogs are very thick and the winds are very variable and changeable. The weather varies the speed of the mail aeroplanes so much that the stage is sometimes flown at 132 m.p.h. and sometimes at 81 m.p.h. In a period of nearly two months, on four occasions the wind was strong enough to reduce the speed to less than 60 m.p.h.

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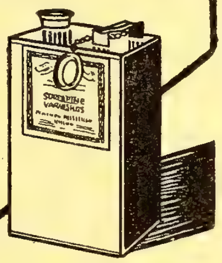

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AIRCRAFT FINANCE

The Fall in Aircraft Shares.

The fall in aircraft shares, following the Government's saving scheme, has produced some comment in the daily Press. Publicity, so long as it is not an exaggeration or misinterpretation of facts for political motives, is welcome; it is likely to do good; it cannot do harm, though the truth is sometimes unpalatable. It is a platitude that, unless national expenditure is made to conform more with the income, the situation must become increasingly menacing and ugly. One also realises that the process of assimilation is calculated to be really painful to some as well as unpleasant to the majority who unwillingly come into direct contact with the pruning-knife.

The Capital at Stake.

Admittedly the end justifies the means, but with some reservations so far as the Aircraft Industry is concerned. It ought to be clearly understood that the capital at stake is not inconsiderable. The "cut" in Government orders was inevitable, and therefore calls for no comment. But it is different with the moral obligations of the Government. No matter what anyone may claim, aircraft were, and still are, in the experimental stage, and those who subscribed the capital at stake had the negative satisfaction of seeing very beneficial results to the nation at large, without any corresponding pecuniary reward.

No Policy: the Parallel of Shipping.

Now the Authorities are doing the worst possible thing by leaving the Industry, if not exactly in the lurch, in a condition of suspense. If it drifts aimlessly without any guiding policy from the central authority, the financial effect is calculated to grow more serious. It is not spoon-feeding that is needful; it is a definition of national policy. Direct doles would be harmful; but if one takes the parallel of the shipping industry, there is a basis to work on. The shipping industry receives a subsidy in respect of mail and other things; this is payment for services rendered, and valuable services, so that there is no flavour of charity. Why not similar subsidies for aviation? The cost would be small, and the reward would be proportionately large, once things settled down on an actual commercial basis. The suggestion that aviation is not yet sufficiently advanced to justify such a charge on the national revenue is unreasonable.

The Disadvantages of Profitable Alternatives.

The average investor risked money in aircraft ventures, firstly, because of the novelty and, secondly, because of the belief that in national interests the Government would accord a certain small measure of support. From all accounts, other countries appear to realise better the obligations in this respect. The shares have fallen away in value, but not because of any inordinate quantity of selling. The manufacture of milk-cans may prove an excellent source of profit, and there are other side-lines and alternatives. This is all very well; but, if circumstances ultimately force the manufacture of "extras" to a primary position and aircraft is side-tracked, the change over would necessarily imperil the national efficiency in aviation. That would be disastrous.

Individual Share Movements.

As to the fluctuations in share values, Aircraft Manufacturing "B" Preference have been dealt in up to 14s. 9d., but the quotation was down to 13s. 6d.—14s. 6d., and the "A" are about the same level, having also recovered. The 7 per cent. Short Term Notes, due 1921-5, have changed hands at 96, a price which represents a very big yield if held till maturity. A slight recovery to 16s. 3d. has occurred in Peter Hooker Preference. Waring & Gillows show little improvement. There has been a reaction to 35s. in Vickers Ordinary; the new shares are purchaseable sixpence or so lower; both rank equal now, and would constitute very good investments.

MORTGAGES AND CHARGES.

Mayrow Industrial Systems, Ltd.—Charge on leasehold premises, 23, Flood Street, Chelsea, with contents, furniture at 39, Victoria Street, S.W., contracts in hand, patents, etc., dated July 18th, 1919, to secure £3,000 and bonus of £600. Holder: A. W. P. Kemp.

AN AGENCY IN AMERICA.

An agency for the British and Colonial Aeroplane Co., Ltd., has been opened at 512, Fifth Avenue, New York, by Mr. William G. Ranels.

A NEW AMERICAN COMPANY.

The Interallied Aircraft Corporation have recently been incorporated in New York. They will sell and manufacture aeroplanes, seaplanes, engines and accessories. They have twenty-five Curtiss training machines for immediate delivery.

Col. W. A. Bishop, V.C., D.S.O. (late R.A.F.), is the president of the company, and Major, W. G. Barker, V.C., D.S.O. (late R.A.F.), is a vice-president.

AIRCRAFT INSURANCE.

Bray, Gibb, and Co., Ltd., of 166, Piccadilly, wish it to be known that they are willing to give advice and assistance with regard to aviation insurance. As to the cost of such insurance this company state that it is impossible to give particulars of rates available because each risk must be treated on its own merits.

ERSATZ CASTINGS.

In view of the strike of 50,000 ironfounders from practically every foundry in the Kingdom, Barimar, Ltd., have arranged to place their large staff of expert welders at the disposal of machinery owners and users whose businesses are held up for the want of new castings. It is often possible to repair every kind of metal by metal fusion in a few hours.

A CHANGE OF ADDRESS.

In order to cope with their greatly increased business—both export and in London and the Home counties—Dunford and Elliott (Sheffield), Limited, the well-known firm of steel manufacturers, have found it necessary to open their own offices in London, at 4, Copthall Buildings, Copthall Avenue, E.C.2, and in future all communications in connection with steel, etc., for export or for delivery in London and the South of England should be sent to the new address.

The general management of the London office is in the hands of Mr. Ivor S. Winby, who has hitherto controlled Messrs. Dunford and Elliott's export business, whilst the services of their London Agent, Mr. E. St. Clair Duncan, are retained in the capacity of sales manager.

A TESTIMONIAL.

The following is an extract from a letter received by C. A. Vandervell and Co. from Mr. F. L. Rapson:—

"As you are probably aware, my Rolls-Royce car is about to start on an official 10,000-mile tyre test under R.A.C. supervision, and as the same C.A.V. outfit is still in use on this car as *originally fitted*, with a mileage of 117,000, I have decided to send the car into your works to have the electrical installation thoroughly overhauled. You will be interested to hear that during the entire mileage recorded above, 73,000 of which were on war work, I have never been held up for a single moment due to electrical troubles."

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

War Office. September 22nd.

Territorial Force.—Infantry.—13th Bn. Lond. R.—Sec. Lt. H. F. Gaynor (Lt., R.A.F.) to be Lt., and to remain secd., July 12th, 1918.

17th Bn., Lond. R.—Sec. Lt. G. H. Halls (Sec. Lt., R.A.F.) to be Lt., and to remain secd., Oct. 26th, 1918.

19th Bn., Lond. R.—Sec. Lt. F. Badcock to be Lt., May 28th; Sec. Lt. S Nisbett to be Lt., June 18th.

20th Bn., Lond. R.—Sec. Lt. R. S. Herring, M.C. (Lt., R.A.F.), to be Lt., and to remain secd., Sept. 1st, 1918.

24th Bn., Lond. R.—Sec. Lt W. D. Kennard (Sec. Lt., R.A.F.) to be Lt., and to remain secd., June 19th, 1918.

War Office, September 23rd.

Regular Forces.—Establishments.—R.F C.—Mil. Wing.—Staff Officer, 3rd Class.—Temp. Sec. Lt. (now actg. Maj.) C. H. Smith, Gen. List, R.F.C., and to be temp. Capt. while so empld., from Oct. 17th, 1917, to March 31st, 1918.

AIR FORCE.

From the "London Gazette."

Air Ministry, September 23rd.

R.A.F.—Permanent Commissions.—The notification appearing in the "London Gazette" of Aug. 1st appointing the following officers to permanent commns. is cancelled:—Lt.-Col. A. E. Cairnes. D.S.O., Maj. W. D. S. Sanday, D.S.O., M C. (A.); Capt. C. H Darley, D.S.C., D.F.C. (A.); Capt. E. J. L. Gilchrist, M.C., D.F C. (A.); Capt. T. E. B. Howe, A.F.C. (A.); Capt. P. E. M. Le Gallais, A.F.C. (A.); Capt. A. S. Redfern (A.); Capt. G. M. T. Rouse (A.); Lt. N. S. Dewey, M.C. (A. and S.); Lt. R. R. Evans (A.); Lt. G. G. G. Graves (A.); Lt. H. N. Loch (A.); Lt. D. S. Robertson (A.); Lt. A W. Simon (A.); Lt. P. L. Stephens (Ad.); Lt. W. F. Williamson (A.).

The surname of Lt. E. J. D. Townesend (S.O.) is as now described, and not "Townshend," as in "Gazette" of Aug. 1st.

The initials of Lt. J. W. Nixon (Ad.) are as now described, and not "L. M.." as stated in "Gazette" of Aug. 1st.

The following temp. appts. are made at the Air Ministry:—Staff Officers, 2nd Class.—Air.—Flt. Lt. D S. K. Crosbie, Aug. 27th; Flt. Lt. F N. Halsted, D.S.C., Sept. 15th.

The following temp. appt. is made:—Staff Officer, 1st Class.—Air.—Wing Comdr. A W. Bigsworth, C.M.G.. D.S.O., A.F.C., Sept. 17th, vice Sqdn Ldr. C. E. Maude.

Flying Branch.—The following Majs. are graded for purposes of pay and allowances as Lt.-Cols. whilst empld. as Lt.-Cols. (A. and S.):—J. S. Mills, D.S.C., from April 22nd to July 31st; S. H. B. Harris, A.F.C., from May 1st to Aug. 9th.

The following Capts. are graded for purposes of pay and allowances as Majs. whilst empld. as Majs. (A.):—I. N. C. Clarke, D.S.C., to May 17th; C. J. Truran. A.F.C., to June 30th; J. H. D'Albiac, D.S.O., from July 24th to July 31st, May 1st.

Capts. to be graded for purposes of pay and allowances as Majs. whilst empld. as Majs. (K.B.):—A. T. Moore. O.B.E., M. H. Spencer, to June 29th, May 1st.

Capt. K. B. Harborn to be Capt. (A.), from (S.O.), March 15th (substituted for the notification in the "Gazette" of July 15th).

Lt. (Hon. Capt.) C. E. Holman to be actg. Capt. whilst empld. as Capt. (A.), from Oct. 31st 1918, to April 30th.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts. (A.):—J. D. Seal, from May 1st to June 30th; S. B. Collett, from May 17th to July 31st; C. G. Mathew, July 8th.

Lt. (Hon. Maj., actg. Capt.) G T. Barry to be Lt. (Hon. Maj., K.B.), and relinquishes the actg. rank of Capt. on ceasing to be empld. as Capt.. June 1st.

Lt. G. H. Langley relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt. (A.), July 24th.

Flying Officer H. B. Pett, M.C., relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt. (A.), Sept. 1st.

Flying Officer M. A. Benjamin, M.C., to be Flying Officer (A.), from (S.O.), Aug. 19th.

Sec. Lts. to be Lts.:—H. C. Wright. April 28th, 1918; C. E. Tidy, March 23rd; P. J. Dowell, March 27th (substituted for the notification in the "Gazette" of July 29th); Alex. Shepherd, May 4th (substituted for the "Gazette" of July 29th, wherein this officer was described as "Arthur Shepherd").

Sec. Lt. D. O. Onslow-Carleton (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), Feb. 11th.

W. R. Wood (temp. Sec. Lt., Manch. R.) is granted a temp. commn. as Sec. Lt. (O.), May 18th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. W. B. Ferrier (Lt., Cent. Ont. R.), Sept. 10th; Capt. J. H. C. Minchin (Capt., Sco. Rif.), Sept. 15th; Sec. Lt. N. Cave (Lt., R. Sussex R.), Sept. 16th.

Transferred to the unempld. list:—Sec. Lt. D J. Brebber, Sec. Lt. N. Duncan, Sec. Lt. J. W. Eastman, Sec. Lt. C. W. Graburn, Feb. 1st; Lt. H. F. Dugall, Feb. 15th; Sec. Lt. E. S. Alger, March 20th; Capt. J. D. Stodart, March 24th; Sec. Lt. F. E Finlay, April 1st; Sec. Lt. J A. Wrighton, April 15th; Sec Lt. A. Roche, April 19th; Lt. F. L. Wills, April 22nd (substituted for notification in "Gazette" of June 13th. wherein this officer was described as "Lt. F. L. Willis"); Lt. H. S. Starling, April 25th; Lt. C. W Cook, Lt. (actg. Capt.) G. C. Dixon, April 30th; Lt. J. F. Thompson, May 1st; Sec. Lt. H. L. Wood, May 2nd; Sec. Lt. W. H. R. Jarvis, Lt. A. B. Massey, A.F.C., May 20th; Sec. Lt. H. R. Hayden, May 25th; Capt. F. U. Y. Weldon, May 28th; Sec. Lt. T. O. James, June 13th; Lt. G. W. Hockey (substituted for the notification in "Gazette" of June 27th, wherein this officer was described as Sec. Lt. G. W. Hockey); Lt. (Hon. Capt.) S. H. Holland (substituted for notification in "Gazette" of May 16th), June 16th; Sec. Lt. A. L. V. Jaussonius, June 17th; Lt. S. McB. Black, June 30th; Sec. Lt. J. D. W. Hindson, Sec. Lt. F. L. W. Irving, July 12th; Flying Officer C. E. Young, Aug. 6th; Flying Officer D. T. C Rundle-Woolcock, Flying Officer H. W. Wheatley, Aug. 8th; Pilot Officer W. N. Jackson, Pilot Officer H. H. Jager, Pilot Officer J. L. Wilcock, Aug. 10th; Flying Officer R. V. Curtis. Pilot Officer R. Isaacs, Aug. 14th; Flying Officer A. A. James, Aug. 15th; Flying Officer D. W. Stuart, Flying Officer A. Ward, Aug. 26th; Pilot Officer G. J. Farnworth, Flying Officer J. G. Robertson, Aug. 27th; Pilot Officer A. M. Flanigan, Flying Officer W. C. Jeffries, Aug. 29th; Pilot Officer S C. Rainbow, Aug. 30th; Flying Officer J. H. Page, Pilot Officer W. G. Pearson, Sept. 1st; Pilot Officer (Hon. Flying Officer) H. W. Lester, Sept. 2nd; Flying Officer E. J. O. Ross, Sept. 3rd; Flying Officer R F. Palmer, Flying Officer W. Rogers, Sept. 6th; Pilot Officer V. C. Davis, Sept 8th; Pilot Officer A. F. Nelson, Pilot Officer (Hon. Flying Officer) H. A. Pound, M.C., Sept. 9th; Pilot Officer G. Exley, Flying Officer S. C. T. Littlewood, Sept. Keen, Sept. 12th; Pilot Officer J. W. Sinton, Sept 13th; Flying Officer W. G. Brind, D.F.C., Flying Officer V. C. Hemsley, Pilot Officer V. G. Record, Pilot Officer J. G. Walton, Sept. 16th, Pilot Officer L. T. Corbett, Flying Officer W. H. Davies, Sept. 17th; Flying Officer G. D. Longfellow, Sept. 18th; Flying Officer G. H. L. Cox, Pilot Officer L. J. Hall, Flying Officer W. T. Ward, Sept. 20th; Pilot Officer F. Cox, Sept. 22nd; Pilot Officer W. H. C. Robson, Sept. 23rd.

Maj. F. W. Honnett relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Sept. 9th.

Lt. W. E. Joseph, R.F A., relinquishes his commn. on account of ill-health caused by wounds, and is granted rank of Capt., Aug. 22nd.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—K. D. MacLeod, July 12th (substituted for notification in "Gazette," Feb. 28th); L. A. Bushe (contracted on active service), July 19th; R. S. V. Morris. Aug. 3rd, 1918.

Lt. E. R. Gunner resigns his commn., Sept. 24th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—E. S. Noble, July 12th; P. V. Tempest, Sept 13th.

Sec. Lt. G. Hughes to take rank and prec. as if his appt. as Sec. Lt. bore date Jan. 11th.

Sec. Lt. S. N. Giroux to take rank and prec. as if his appt. as Sec. Lt. bore date Oct. 24th, 1918.

The notification in "Gazette," July 16th, 1918, concerning Sec. Lt. M. E. Miller is cancelled. The notification in "Gazette," April 9th, 1918, stands.

The notification in "Gazette," April 11th, concerning Lt. E. F. Jones is cancelled.

The notification in "Gazette" of July 11th concerning Sec. Lt. A. G. Ely is cancelled.

Administrative Branch.—Maj. R. Cockburn, O.B.E., is graded for pay and allowances as Lt.-Col. whilst empld. as Lt.-Col., from May 1st to July 30th.

Maj. A. E. Loder to be Maj., from (S.O.), July 18th.

Sqdn. Ldr. G. H. Thomson, O.B.E., to be Sqdn. Ldr., from (S.O.). Aug. 29th.

Flying Officer (Hon. Flt. Lt.) D. C. G. Sharp to be actg. Sqdn. Ldr whilst empld. as Sqdn. Ldr.. Aug. 1st.

Capt. H. C. Mallett, M.B.E., is graded for pay and allowances as Maj. whilst empld. as Maj., May 1st to July 12th.

Flt. Lts. to be Flt. Lts., from (S.O.):—F. J. Gray, O.B.E., Aug. 1st (substituted for notification in "Gazette" of July 4th); G. M. Broadburn, A. Warnock, Aug. 15th.

The following Lts. are graded for pay and allowanecs as Capts. whilst empld. as Capts.:—L. B. Nicholls, May 1st; A. H. Tarper, from May 1st to 19th; F. W. H. Durrant, from (T.), from May 1st to Aug. 16th.

Lt. (Hon. Maj.) A. J. Battine is graded for purposes of pay and allowances as Capt. whilst specially empld., June 8th.

Lt. H. Gwynne-Smith relinquishes grading for purposes of pay and allowances as Capt. on ceasing to be empld. as Capt., June 30th.

Lt. A. Eggar to be Lt.. from (S.O.), July 5th (substituted for notification in "Gazette" of July 22nd, wherein this officer was described as L. A. Eggar).

Flying Officers to be Flying Officers, from (S.O.):—J. A. H. Savage, Aug. 15th; H. C. Pyper. Sept. 1st.

Sec. Lts. to be Lts.:—(Hon. Lt.) L. B. Clarkson, April 2nd, 1918; W. Simmonds, Jan. 10th; W. R Wood, Feb. 1st (substituted for notification in "Gazette" of Feb. 4th); E. P. Woodman, June 20th.

Sec. Lt. W. R Wood to be Sec. Lt., from (O.), Oct. 8th, 1918 (substituted for notification in "Gazette" of Nov. 5th, 1918).

Sec. Lt. H. Preston (late Gen List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Sept. 28th, 1918.

Lt. D. S. Cairnes (Lt., Rif. Bde.) relinquishes his commn. on ceasing to be empld., June 17th.

Transferred to unempld. list:—Lt. E. F. Jones, March 29th; Lt. F. A. Whitfield, April 12th; Sec. Lt. R. H. Walker, April 14th; Lt. O. O'Conner, April 30th; Lt. N. S. Cameron, May 1st; Sec. Lt. H Hopkinson, May 18th; Sec. Lt. G. Lovett, June 16th; Lt. C. P. Robertson, June 30th; Lt. G. V. Walsh, July 8th; Lt. A. T. Redgwell, July 17th; Capt. S M. Wood. July 25th; Pilot Officer W. R. G. Williams, July 11th; Pilot Officer (Hon. Flying Officer) C. O. Coton, Aug. 26th; Flt. Lt. W. H. Mainprize, Sept. 3rd; Pilot Officer E. G. Burden, Pilot Officer D. J. Fryer, Flying Officer (Hon. Flt. Lt.) C. J. Trail, M.C., Sept. 12th; Pilot Officer F P. Carroll, Pilot Officer H. F. Hendry, Sept. 13th; Flt. Lt. E. Newing, Flying Officer (Hon. Flt. Lt.) R. A. Shepheard-Walwyn, Sept. 16th; Flying Officer F. A. Whitfield, Sept. 20th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—K. D. Kayler, May 20th (substituted for notification in "Gazette," Jan. 10th); G. J. Murphy (contracted on active service), July 12th; C. W. Tuck, July 12th (substituted for notification in "Gazette," Jan. 7th).

The notification in "Gazette," July 22nd, concerning Sec. Lt. G. J. Murphy is cancelled.

The notification in "Gazette," Feb. 28th, concerning Lt. B. W. Blayney is cancelled.

The notification in "Gazette," Aug. 9th, 1918, concerning Lt. C. R. Ansell (R.W. Surr. R.) is cancelled.

The notification in "Gazette," Aug. 2nd, 1918, concerning Sec. Lt. R. S. V. Morris is cancelled.

The notification in "Gazette," Feb. 21st, concerning Lt. N. Smith is cancelled.

The notification in "Gazette," May 23rd, concerning Sec. Lt. C. H Marston is cancelled.

The notification in "Gazette," Oct. 15th, 1918, concerning Sec. Lt. H. Preston is cancelled.

Technical Branch.—To be actg Majs. whilst empld. as Majs., Grade (A.):—Capt. K D. Abercromby, from (Ad.), April 1st, 1918 (substituted for the notification in the "Gazette" of April 19th, 1918); Lt. T. L. F. Burnett, M.B.E, May 1st (substituted for notification in the "Gazette" of July 15th).

The following Capts. are graded for purposes of pay and allowances as Majs. whilst empld. as Majs., Grade (A.):—J Stewart, E. Holloway, O.B.E., to May 21st, May 1st.

Capt. W. J. Waddington relinquishes the grading for purposes of pay and allowances as Maj. on ceasing to be empld. as Maj., Grade (A.), July 25th.

Flt. Lt. N. V. Wrigley to be Flt. Lt., Grade (B.), from (S.O.), Aug. 1st.

Lt. (actg. Capt.) A. W. Furbank to be Lt., Grade (B.), and to relinquish the actg. rank of Capt. on ceasing to be empld. as Capt., Dec. 1st, 1918.

Lt. R. W. Lewis relinquishes the grading for purposes of pay and allowances as Capt. on ceasing to be empld. as Capt., Grade (B.), May 29th.

Lt. R. G. Whitcombe relinquishes the grading for purposes of pay and allowances as Capt. on ceasing to be empld. as Capt., Grade (A.), July 21st.

Lt. K. I. Goodman to be Lt., Grade (A.), from (Ad.), May 17th, 1918 (substituted for the notification in the "Gazette" of Sept. 3rd, 1918).

Lt. (Hon. Capt.) G. M. Nobbs is graded for purposes of pay and allowances as Lt. whilst empld. as Lt., Grade (B.), Nov. 26th, 1918.

Lt. B. S. S. Rockey to be Lt., from unempld. list, Feb. 7th, with precedence next below Lt. A. S. Dunn.

Sec. Lts. to be Lts.:—(Actg. Capt.) W. W. Hammond, April 2nd, 1918, and to retain the actg. rank of Capt. until April 30th (substituted for notification in the "Gazette" of Aug. 29th); E. A. Gater, May 3rd (substituted for notification in the "Gazette" of July 29th).

V. G. Darrington (Lt., R.F.A.) is granted a temp. commn. as Lt., Grade (A.), Nov 5th, 1918, with seniority from April 1st, 1918 (substituted for notification in the "Gazette" of Nov. 26th, 1918).

Sec. Lt. (Hon. Lt.) H. R. Sterrett to be Lt., without pay and allowances of that rank, April 2nd, 1918.

Transferred to unempld. list:—Sec. Lt. C. H. Marston, March 7th; Capt. (actg. Maj.) L. S. Metford, April 19th (substituted for notification in the "Gazette" of Sept. 9th): Sec. Lt. (actg. Capt.) G. E. Hodges, April 30th (substituted for notification in the "Gazette" of July 11th); Sec. Lt. G. Wells, June 6th; Maj C. A. L. Harrison, July 8th; Flying Officer B. S. S. Rockey (R.E.), Aug. 7th; Pilot Officer J. O. Cooper, Aug. 20th; Pilot Officer A. Robinson, Aug. 25th; Pilot Officer F. J. MacLennan, Sept. 1st; Flying Officer E. D. Inskip, Sept. 3rd; Pilot Officer E. J. Brooks, Sept. 5th; Flt. Lt. A. J. Boulter, Sept. 8th; Flying Officer J. H. Gladding, Pilot Officer P. F. Jessop, Sept. 11th; Flt. Lt. D. C. Waylen, M.B.E., Sept. 12th; Pilot Officer (Hon. Flying Officer) V. L. Henwood (substituted for notification in the "Gazette" of March 7th); Pilot Officer L. W. Scoggins, Sept. 13th; Flying Officer W. Duff, Flt. Lt. C. E. Elliott, Flying Officer F. H. Goodwin, Sept. 16th; Pilot Officer (actg. Flt. Lt.) J. H. Lytle, Flt. Lt. C. E. Stent, Sept. 17th.

Lt. C. M. Kelly relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Sept. 9th.

The following are removed the Service, His Majesty having no further occasion for their services as officers:—Lt. A. C. Hankey, Sec. Lt. C. J. Young, Sept. 24th.

Medical Branch.—Transferred to unempld. list:—Capt. W. H. Payne, Feb. 24th; Sqdn. Ldr. (actg. Wing Comdr.) F. F. Muecke, C.B.E., Aug. 31st.

Memoranda.—The following relinquish their commns. on ceasing to be empld.:—Temp. Hon. Lt. F. W. Hedgecock, Aug. 20th; Temp. Hon. Lt. H. Bedson, Sept. 16th.

Transferred to the unempld. list:—Capt. (actg. Maj.) P. P. C. Penberthy, O.B.E., from (S.O.), April 30th; Flying Officer F. W. Hedgecock, Aug. 20th; Pilot Officer R. D. McE. Hart, Sept. 13th; Flying Officer H. Bedson, Sept. 16th; Sqdn. Ldr. G. W. Cranfield, M.B.E., from (S.O.), Sept. 17th; Sqdn Ldr. J. H. Hills, O.B.E., from (S.O.), Sept. 21st.

Sec. Lt. A. L. Maquard is dismissed the Service by sentence of a General Court-Martial, Aug. 20th.

The notifications in the "Gazettes" of Aug. 8th and Aug. 19th concerning Capt. P. P. C. Penberthy are cancelled.

The notifications in the "Gazette" of Aug. 22nd concerning Sec. Lt. R. J. Walker and Pilot Officer C. A. Russell are cancelled.

The notification in the "Gazette" of Sept. 9th concerning Capt. S. M. Wood is cancelled.

PERSONAL NOTICES.

NAVAL.

Engagement.

WILLIAMS—BRUCE.—The engagement is announced of Capt. W. T. S. Williams, D.S.C., R.A.F. (late R.N.A.S.), only son of the late Dr. Walter Williams, M.B., of Portmadoc, North Wales, and of Mrs. Williams, of St. Albans, Hertfordshire, and Ethel Marjorie, only daughter of Brig.-Gen. C. D. Bruce, C.B.E., of 31, Buckingham Gate.

MILITARY.

Engagements.

FROST—SNOWDEN.—The engagement is announced between Captain O. H. Frost, M.B.E., M.C., R.A.F., only son of the late Mr. Robert Frost and Mrs. Frost, of 11, Coleherne Road, S.W., and Pamela Lucy Mary, elder daughter of the late Mr. Herbert Snowden and Mrs. Snowden, of 80, Elm Park Gardens, S.W.

HARRIS—BURNS.—A marriage has been arranged, and will shortly take place, between Lieut. Kenneth Milner Harris, Suffolk Regt., attd. R.A.F., youngest son of the Rev. Charles P. Harris, M.A., B.C.L., LL.D., Oxford, of Staplegrove Rectory, Taunton, Somerset, and of Mrs. Harris, and Alys, elder daughter of Mr. B. H. Burns and Mrs. Gower-Burns, Christchurch, New Zealand.

McCALMAN—NEALE.—The engagement is announced between the Rev. Hugh McCalman, M.C., Chaplain, R.A.F., only son of Lieut.-Col. and Mrs. McCalman, of Bournemouth, and Mildred Rosalie, youngest daughter of Mr. and Mrs. M. W. Neale, of Sutton, Surrey.

PORTER—STEPHENS.—An engagement is announced between Capt. Garthshore Tindal Porter, R.G.A. and R.A.F., eldest son of the late T. P. Porter, Esq., Government Surveyor, Queensland, Australia, and of Mrs. Porter, late of Cheltenham, and Christine Cecilia, elder daughter of Mr. and Mrs. Albert Stephens, Gloucester.

Marriage.

DEACON—RIDDEY.—On Sept. 25th, at Moreton-in-Marsh, Capt. G. R. A. Deacon, M.C., R.A.F., younger son of Mr. A. W. Deacon, J.P., of Swindon, was married to Edith Mary Riddey, elder daughter of Mr. J. A. Riddey, of Moreton-in-Marsh, Glos.

AIR FORCE.

Engagements.

JONES—STAFFORD.—The engagement is announced between Capt. C. N. Jones, A.F.C., late R.A.F., only son of the late Alfred G. Jones, of Shantung, China, and of Mrs. Jones, Elmhurst, Lonsdale Place, Derby, and Dorothy, elder daughter of the late George M. Stafford, of Sydney, Australia, and of Mrs. Stafford, 68, Holland Park Avenue, W.11.

LESLIE—TAYLERSON.—The engagement is announced between Kenneth Chapelow Leslie, late Lieut., R.A.F., of Launceston, Cornwall, and Doris Ellen, only daughter of Mr. and Mrs. Taylerson, of Stranton, Reigate.

LONGMAN—EDSALL.—The engagement is announced between Lieut. Reginald Longman, R.A.F., youngest son of Mrs. C. Longman, Wryde, Raymead Avenue, Thornton Heath, and Olive, eldest daughter of Mr. and Mrs. Percy Edsall, Hughenden, Dunheved Road North, West Croydon.

RODWELL—LIVOCK.—The marriage between Lieut. R. J. Rodwell, R.A.F., and Margery, eldest daughter of Mr. and Mrs. Livock, of Newmarket, will take place on Tuesday, Oct. 21st, at the Roman Catholic Church, Newmarket, at 2.30. There will be no reception, but all friends are welcome at the church.

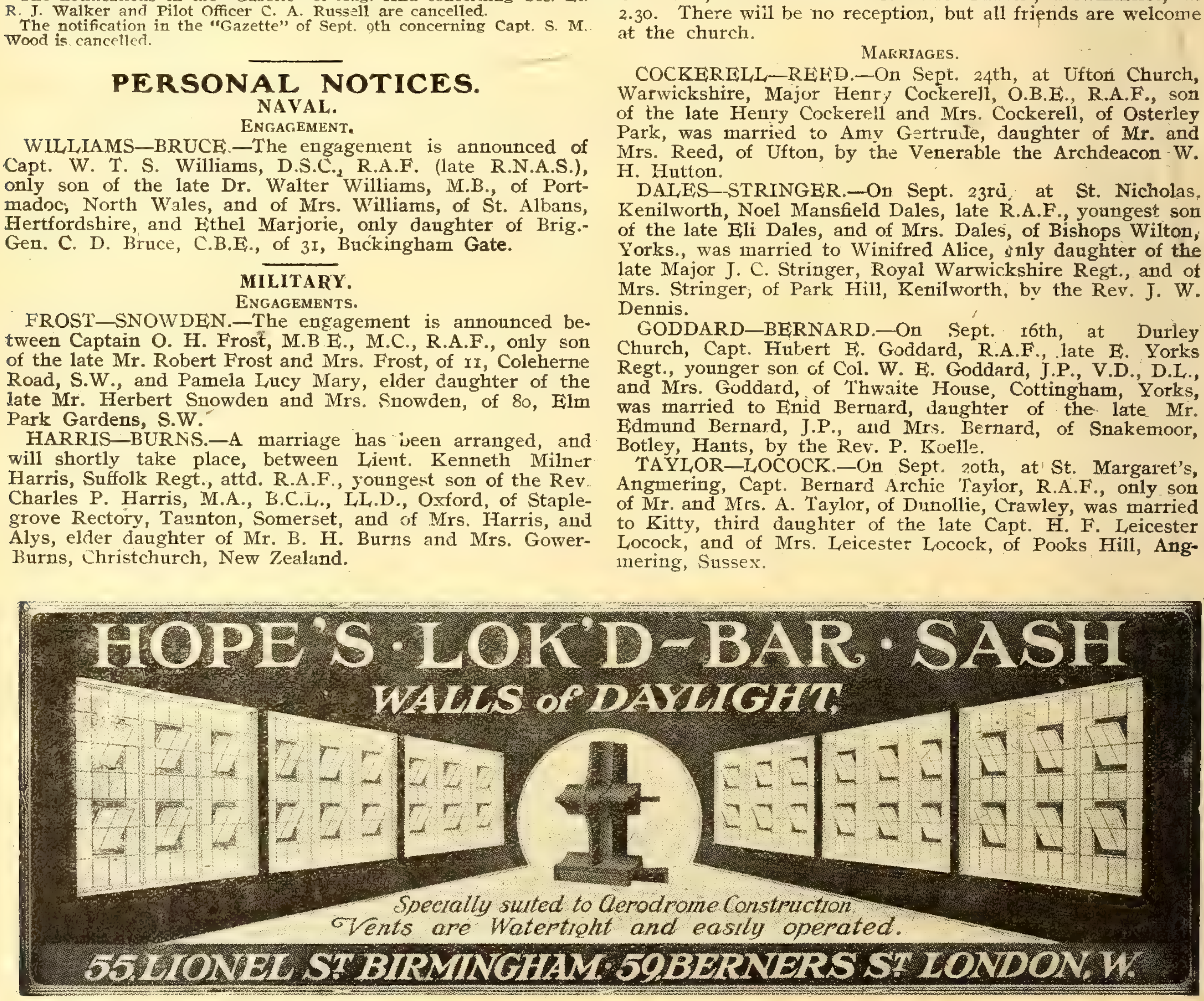
Marriages.

COCKERELL—REED.—On Sept. 24th, at Ufton Church, Warwickshire, Major Henry Cockerell, O.B.E., R.A.F., son of the late Henry Cockerell and Mrs. Cockerell, of Osterley Park, was married to Amy Gertrude, daughter of Mr. and Mrs. Reed, of Ufton, by the Venerable the Archdeacon W. H. Hutton.

DALES—STRINGER.—On Sept. 23rd, at St. Nicholas, Kenilworth, Noel Mansfield Dales, late R.A.F., youngest son of the late Eli Dales, and of Mrs. Dales, of Bishops Wilton, Yorks., was married to Winifred Alice, only daughter of the late Major J. C. Stringer, Royal Warwickshire Regt., and of Mrs. Stringer, of Park Hill, Kenilworth, by the Rev. J. W. Dennis.

GODDARD—BERNARD.—On Sept. 16th, at Durley Church, Capt. Hubert E. Goddard, R.A.F., late E. Yorks Regt., younger son of Col. W. E. Goddard, J.P., V.D., D.L., and Mrs. Goddard, of Thwaite House, Cottingham, Yorks, was married to Enid Bernard, daughter of the late Mr. Edmund Bernard, J.P., and Mrs. Bernard, of Snakemoor, Botley, Hants, by the Rev. P. Koelle.

TAYLOR—LOCOCK.—On Sept. 20th, at St. Margaret's, Angmering, Capt. Bernard Archie Taylor, R.A.F., only son of Mr. and Mrs. A. Taylor, of Dunollie, Crawley, was married to Kitty, third daughter of the late Capt. H. F. Leicester Locock, and of Mrs. Leicester Locock, of Pooks Hill, Angmering, Sussex.



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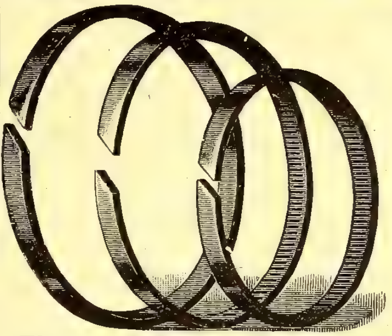

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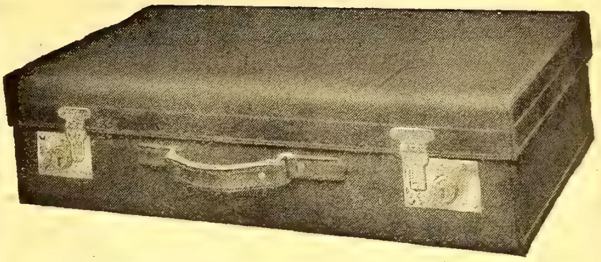

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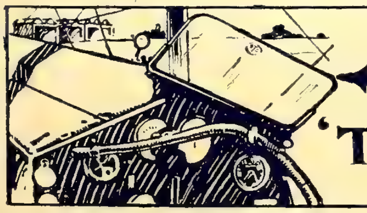

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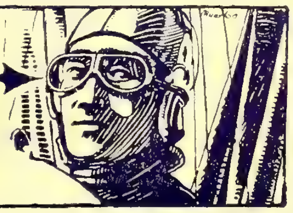

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ON OUR INLAND AERIAL POSTS.

It has always been a kind of article of faith with the population of this country that the British Post Office is the most wonderful institution of its kind in the world. People have always believed that anything committed to the care of the Postal Authorities was as safe as if it were in the Bank of England, and that any letter was always sure to be delivered—even if it took ten years to deliver it. And to a very great extent this faith has been justified. The non-delivery of a letter or parcel in the British Isles is one of the most unusual of Nature's phenomena.

But the Post Office is not fond of new-fangled ideas, and its methods are slow and circuitous. For example, it was years before it adopted motor transport for mails—in which delay perhaps it was justified when one remembers the early motor vans which the Post Office was badgered by the motor trade to adopt. Also, the Post Office took over a very fairly efficient telephone system from a private company and made it one of the slowest and least efficient services of its kind, though, it must be admitted, a reasonably sure means of communication provided that the user is possessed of adequate patience.

Therefore, taking the history of the Post Office into consideration, it was not reasonable to expect that it would leap enthusiastically at the aeroplane as a means of conveyance in normal times. Nevertheless, when in an abnormal time such as the present, the Post Office was obliged by force of circumstances to countenance the use of aeroplanes, the aforesaid history of the department did at least justify one in hoping that reasonable commonsense would be used in organising the new service.

An Inexplicable Muddle.

Just what has happened to the Post Office is not very clear at the moment. So far as one knows, it has not invited the assistance of the Committee of the Royal Aero Club in laying down the rules and regulations for the Aerial Post: and it seems that the Department of Civil Aviation has had very little to do with the affair beyond allowing the use of aerodromes and sending a few machines and calling a meeting of people in the Aircraft Industry to discuss the Post Office proposals. Therefore there seems no obvious reason for the amazing imbecility with which the whole affair has been mismanaged.

It would be interesting for the sake of historical record to know the name of the official who laid down the regulation that the fee for letters by the aerial mail should be 2s. an ounce. It would be equally interesting to know the name of the official who thought of the brilliant idea of "hiring"—which really means commandeering—all available civilian aeroplanes for postal work. For the net effect of the work of these two great geniuses was to stop the sending of letters by aerial post and to stop civil aerial transport. From which it has followed that during the past week the sky has been full of aeroplanes, burning vast quantities of petrol and carrying nothing and nobody—except their very bored pilots.

To make matters worse, having thus succeeded in disorganising civilian aerial transport, the Post Office, after two days, cancelled all the mail-carrying by civilian transport firms, and transferred its mails to the care of the R.A.F. This may, perhaps, have assured greater reliability so far as reliability was concerned, though one doubts it, but it certainly interfered with the first steps of a struggling industry towards developing a new and paying form of activity. On the other hand, it gave the R.A.F. a job of work to do, and made a number of young gentlemen supremely happy after months of idleness.

And then to crown it all the Post Office stopped sending mails by the R.A.F. after four days.

Freaks and Figures.

Take a record of the opening day, as shown in the Civil Aerial Transport Notes this week. It has been stated by the "Morning Post," writing presumably with authority, that 315 letters were carried, though there was fuselage capacity for 4,750 lbs.

Allowing that the 315 letters each weighed the statutory ounce, the total weight of letters carried would be just under 20 lb. Therefore carrying capacity for 4,730 lb. was wasted. That means, roughly, that 34 passengers were prevented from travelling.

One does not imagine that 34 passengers arrived at the various aerodromes and danced with rage when burly postmen prevented them by physical force from getting into the machines. But if only ten people who wished to travel on urgent business were refused seats at the various booking-offices it means that considerable harm has been done to civil aviation, and very probably to the trade of the country. On the other hand, it might very well prove that the bulk of the total load of 19 lb. 11 oz. of letters consisted of quite unnecessary communications sent by people who were willing to spend a couple of shillings for the fun of having a sample of the earliest official aerial mail.

When one comes to consider some of the details now available one scarcely knows whether to laugh or cry over these puerile attempts at running a mail service.

For example, a Westland Limousine carried 1 lb. 1 oz. (not forgetting the one ounce) of letters from Hounslow to Bristol. Just imagine sending a Rolls-Royce engine and a pilot (and accommodation for three passengers) 120 miles to carry 1 lb. 1 oz.! And remember that the machine had to fly from Yeovil to Hounslow in the first place in order to pick up its "load."

Then we learn that a Blackburn Kangaroo (two Rolls-Royces of 375 h.p. each) flew from Hounslow to Newcastle with 3 lb. 8 oz. You perceive the wisdom of the Postal Authorities in choosing a twin-engined machine for the extra load, which—if you have a slight knowledge of arithmetic—you may prove is more than three times as great as that carried by the Westland.

This problem must have presented considerable difficulty. If the load for Newcastle had been 4 lb. 4 oz. obviously there would have been a grave risk in committing it to the care of anything less than a four-engined Handley Page.

However, apparently experience teaches even the officials of the Post Office, for one learns that the Newcastle machine left at 7.50 a.m., and at 8 a.m. another Kangaroo left for Renfrew carrying 13 lb. 10 oz. of mails. One is aghast at this official recklessness. One can only assume that, having seen the Newcastle machine lift its load with apparent ease, the officials felt justified in taking the risk.

Or perhaps by that time some of the officials of the Department of Civil Aviation had arrived—doubtless greatly inconvenienced by being thus compelled to be out in the middle of the night (as it would be, judging by former Air Ministry hours)—and had proved to the Post Office authorities that such a load was safe. One official department is always ready to accept the figures of another, even though the mere civilian may know perfectly well that the figures are either foolish or faked.

Anyhow, this success in lifting 13 lb. 8 oz. with only two engines—where, judging by the first postal effort with the Westland machine, thirteen and a half engines at least would have been necessary—the Authorities were spurred to still further recklessness. They actually allowed a B.A.T. commercial machine with only one engine to leave for Didsbury carrying 6 lb. 2 oz. of mails.

Truly "Education is a great thing!" as an Irish servant once remarked when her mistress demonstrated to her that she could write her name with her finger in the dust on top of the piano. At this rate of progress we may find aeroplanes carrying a full load of mails in the course of the next century.

Profits and Losses.

It is stated by the "Daily Mail" that a Post Office official said: "The charge is very little more than that for a telegram, and the service does not meet its cost, nor is it expected to do so." Apart from the fact that this is a very damning statement for an official to make in these days when the official scream is all for economy, why send a letter by aerial post if it costs more than a telegram?

But is the service not expected to meet its cost? One has one's doubts. If the machines carried their full load the service would not merely pay. It would afford a clear case for a charge of profiteering against the Government. For consider the case of any ordinary single-engined machine which is quite able to carry a load of 700 lb.

Now 700 lbs. is equal to 11,200 ounces, and at 2s. per ounce this is equal to £1,120. One gathers that the Post Office hires these machines at about £100 per trip, which leaves £1,020 for other expenses and profit. If one allows £20 for the motor services to and from the terminal aerodromes, the Post Office would show a clear profit of about £1,000 on an outlay of £120, which is at the rate of about eight hundred and fifty per cent.

A Paying Proposition.

If the Post Office authorities had exercised a little common sense they could quite easily have made the Aerial Post pay its way and have made it a real benefit to the community. Instead of prohibiting the sending of aerial letters by charging 2s. an ounce, and limiting the places at which such letters can be posted to three post-offices in positions which are not frequented by people who are likely to want to send letters by air, the charge should have been 6d. per ounce, and it should have been permissible to post such letters anywhere.

Naturally it will be objected that such a course would mean extra sorting. In theory it would. In practice it would not. For every letter bearing a 6d. stamp and marked clearly "Air Mail" by the sender would merely go straight into the air mail section, and the extra sorting would be no more than if several thousands of people suddenly took to writing daily to Auchtermuchtie or Kiltimagh.

The Air Mail letters would merely represent another place on the map, so far as the G.P.O. was concerned, and the sorting of the Air Mail letters themselves has to be done in any case, whether the postal aeroplanes carry 315 letters in the day or 315,000 letters. In fact, the cost per letter of sorting 315 letters must be enormous, whereas the cost of sorting big numbers is very small when charged to each letter proportionately.

As concerns the sixpenny stamp, one would argue that such a low fee would induce thousands of people to send letters by air posts who would not pay 2s. an ounce. Thus the postal aeroplanes would be assured of a full load for every journey.

Now 700 lb. of letters at 6d. per oz. is equal to £280 per load. And as the machines cost, as aforesaid, £100 per trip for hire, the Post Office would still have £180 for incidental expenses, and so might very well run the service at a profit.

Perhaps the Postal Authorities will be good enough to consider this suggestion in the interests of economy and of the taxpayers' pockets. While they worked the inland aerial posts merely wasted petrol and money and were of no use at all to anybody who matters. The only good thing about them was that they provided the aeroplane and engine makers with good material for advertisements. Of which material, by the way, few have made the best possible use.

The Air Ministry's Eccentricities.

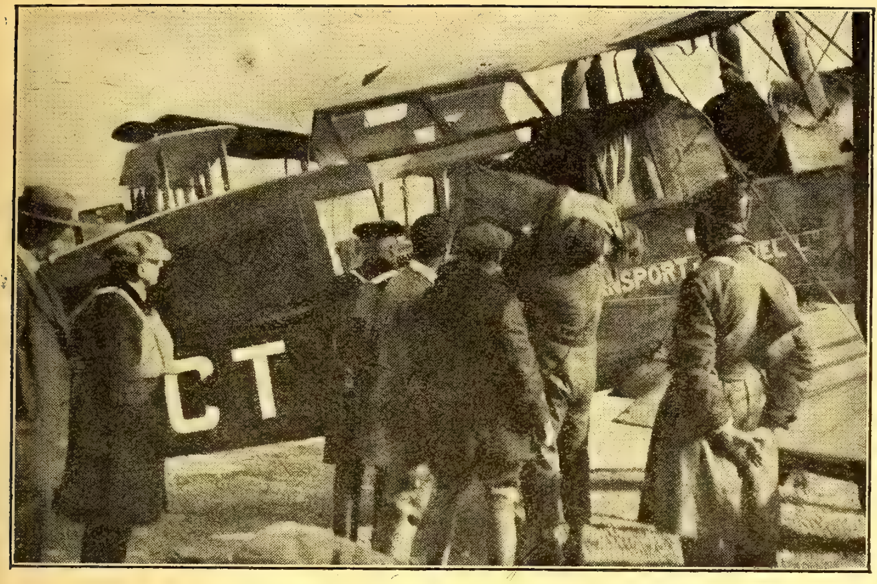
As one might have expected, the Air Ministry's share in the proceedings was calculated to make matters worse. Presumably the Post Office was indifferent as to whence the letters went, though it would have a slight bias in favour of the most accessible aerodromes. Consequently the Air Ministry chose to send the mails from Hounslow, which involved a long drive from the G.P.O. through the thickest of London traffic, and through that awful traffic jamb at Brentford, which always means delay.

The obviously sensible thing to do was to send the mails from Hendon or Cricklewood, either of which are miles nearer to the G.P.O. than is Hounslow, and either of which can be reached by either of two roads (the Edgware Road and the Finchley Road), both of which are singularly open and free from heavy traffic. The mails could get to either aerodrome in less than half the time it took for them to reach Hounslow. And, moreover, both Hendon and Cricklewood are actually on the way to the great cities in the North whither go the greater portion of the mails, whereas Hounslow is quite out of the way and involves a longer air journey.

All of which is quite in keeping with the methods of the Department of Civil Aviation, which for some incomprehensible reason seems to be obsessed by a love for the Wilderness of Hounslow, only rivalled by its affection for the death-trap at Kenley.

An Irish Economy.

Apropos the Air Ministry's vagaries, one hears that it has been preparing to run an official aeroplane service of Bristol Fighters from Holyhead to Dublin. Now everybody knows that the Bristol Fighter is one of the finest aeroplanes in the World. But why, in the name of common sense, run a land-machine service over 60 miles of sea? What are our flying-boats and seaplanes doing? It must take over half an hour at least



THE AERIAL MAIL.—Loading the London-Paris mail into the Airco D.H.16 machine at Hounslow.

to cross that 60 miles of water, and if there is a head wind the time must go up to three-quarters of an hour. Baldonnel, the Dublin landing-ground, is, like all the other official aerodromes, ten miles on the *wrong* side of the city which it is supposed to serve. And that means another three-quarters of an hour to get the mails back into Dublin.

Thus the time from Holyhead to Dublin is something over an hour and a half. And all the time there is a perfectly good and regular mail-boat service between the two places which takes three hours. So that to save a very problematic hour and a half the Air Ministry apparently proposes to risk a number of valuable lives and machines by sending land machines over the sea.

In any case, if there is any violent hurry with specially urgent official dispatches a flying-boat could get off smooth water in Holyhead Harbour and alight in smooth water at Kingstown or in the mouth of the Liffey and save all the land journey from Baldonnel to Dublin. But that, of course, is far too simple a proposition to appeal to the Air Ministry, at any rate on either its Civil Aviation or its Naval side.

THE BENEFIT TO THE R.A.F.

On the other hand the purely Military side of the R.A.F. seems to have done, as usual, extraordinarily well. One may not, of course, go into details concerning its organisation for the distribution of special dispatches from Government Departments to the Provinces, but one can vouch for the fact that it has been excellently done. The regularity and speed with which dispatches have been taken and replies brought back has surprised and pleased even the most stolid and unbelieving of officials.

Also one gathers that certain patrol work which has been done by the R.A.F. along the railways has had considerable moral effect on the lower-class railwaymen and has definitely restrained acts of sabotage. So that, despite all the silliness and muddle-headedness of the Post Office people and of the Civil Aviation authorities, aviation in general and the R.A.F. in particular have profited by the strike.

ECONOMY AND PROHIBITION.

Yet another minor eccentricity is concerned with a kind of local aerial mail which, one is told, is being run in the Liverpool area. There are, it will be recalled, certain of those sacred "prohibited areas" in the Mersey Defence district, and though the postal aeroplanes are piloted by R.A.F. officers, or by ex-R.A.F. officers, they are compelled to make a detour of an extra 15 miles to avoid these areas.

And this is done at a time when urgent appeals are being made to all motorists to economise every drop of petrol. Truly our officials are a race apart. Perhaps "Mr. Pussyfoot" might give them some good advice on the subject of the inordinate consumption of spirit.

THE USES OF OFFICIAL MUDDLES.

It will be interesting to see how all this muddle is straightened out in course of time. Though the strike appears to be broken, we are still a long way from Industrial Peace, and though perhaps the use of aerial mails may have ceased by the time these notes appear, doubtless they will be revived at the next crisis.

Our officials do actually learn sense if one gives them time, and especially if they are criticised with sufficient causticity. One has done one's little best in this direction, and so one hopes that the points raised in this article may help towards economy and efficiency in the future of aerial mail-carrying.—C. G. G.

THE AERIAL MAIL.—Taking mails aboard the Handley Page London-Brussels aeroplane. The aeroplane carried 1,500 lb. of official mail to Brussels on Sept. 29th. The same machine returned on the following day with a pilot, mechanics, two passengers, and 1,940 lb. of mail. It also carried a 2½-year-old baby. Apparently machines flying to the Continent can carry much more than those used at home!

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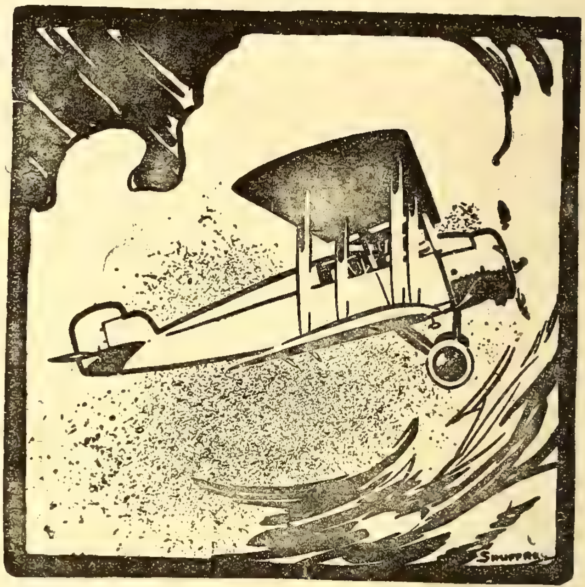

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NAVAL & MILITARY AERONAUTICS

[The "Official Gazette" Notices and the Personal Notices will be found on p. 1350.]

GREAT BRITAIN.

MILITARY.

The Casualty List.

Reported Oct. 4th.

Previously reported Missing, now reported Killed.—Phillippo, Lt. A. J. C. E., R.A.S.C., attd. R.F.C.
Ottey, Sec. Lt. R. G., R.F.C.
Samuels, Sec. Lt. G. B., Durh. L.I., attd. R.F.C.
Smith, Capt. A. H., M.C., R.F.C.

AIR FORCE.

Searchlights for Aerodromes.

The Air Ministry announced on Oct. 6th that as a temporary and emergency measure to assist belated aircraft to locate their aerodromes after dusk the Air Ministry has arranged for vertical searchlight beams to be projected from the following aerodromes about dusk till all service machines have arrived :—

Hounslow, one vertical beam.
Kenley, two vertical beams.
Limpne, three vertical beams, arranged in a triangle.

An Aerodrome Fire.

A fire occurred on Oct. 2nd at Shotwick Aerodrome, near Chester. At about seven o'clock a hangar was observed to be on fire. The promptitude of two local fire brigades prevented the fire from spreading, but the hangar was burned out, and a number of aeroplanes destroyed. The cause of the fire is unknown.

Shotwick Aerodrome is an important R.A.F. Air Station, and is also a civilian flying ground.

A Forced Landing.

A message from St. Raphael, dated Sept. 30th, states that an S.E. biplane, No. 246, piloted by Capt. L. Edward, R.A.F., was forced to land near Sillans-la-Cascade, near Dragnuignan. The mchine was on its way from London to Egypt, via St. Raphael.

The Freedom of the City.

Major C. Scott, R.A.F., the commander of H.M.A. R.34, received the freedom of the city of Dunbar in recognition of the flight of R.34 across the Atlantic.

The Result of an Accident.

Serjeant Thomas Bunting, R.A.F., has died from burns caused by the explosion of an R.A.F. motor-launch moored in Poole Harbour, which was reported last week.

FRANCE.

On Oct. 3rd a reception was held at the Aero Club de France in honour of Commandant Vuillemin who has recently concluded his aerial tour from Paris to Cairo and back. The reunion was presided over by H.I.H. Prince Roland Bonaparte the Comte de la Vaulx, and General Duval.

GERMANY.

The Allied Supreme Council met on Sept. 29th in Paris to discuss the question of how to prevent the Germans from selling or exporting their aircraft material contrary to the order of the Allied and Associated Powers. A resolution on the subject proposed by Marshal Foch was considered and accepted.

It was also decided to insist on the Germans surrendering the sums they have already received by the sale of aircraft material without the sanction of the Allied and Associated Powers. The question of the distribution of German aircraft among the Allied and Associated Powers was discussed, and the report of the military representatives was accepted.

On Oct. 3rd the following appeared in the "Intransigeant," of Paris, concerning the adoption by the Supreme Council of the report of the Inter-Allied Commission of aircraft material :

"According to the programme which was decided upon for the sharing out of the Zeppelins, France will have the first choice, then Great Britain, and then the United States. After this choice has been made the remaining Zeppelins will be destroyed. The different Powers will also have the right to choose various makes of German aeroplanes, Belgium, Greece, Roumania, and Serbia also taking part in this partition.

"No official confirmation of the destruction of Zeppelins by the Germans has been received, but it is known to the French authorities that German officers attached to the airship service are destroying all vessels the existence of which was not formerly known to the Allies.

"According to the terms of the Peace Treaty, the manufacture of German machines must cease six months after the ratification of the Treaty by the Powers. A factory at Dusseldorf is at present engaged in constructing a giant type of Zeppelin. The work is being hurried forward in order that it may be finished before the ratification of the treaty."

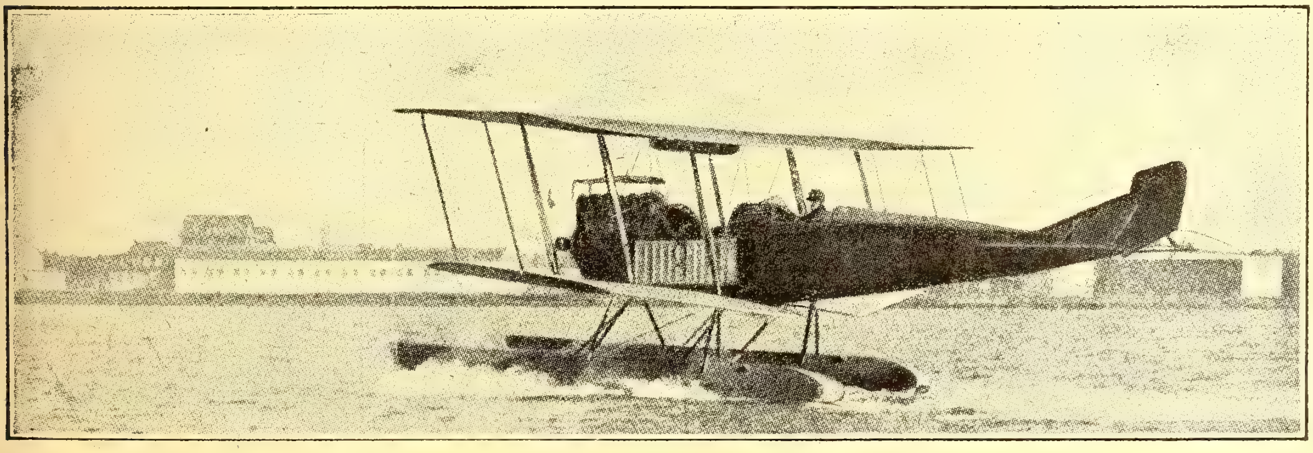
HOLLAND.

Capt. Hardenburg, of the Royal Dutch Army, commanding certain aviation units in the Netherlands, and Lieut. Labouchère, Military Attaché at the Dutch Legation in Paris, are visiting aeronautical factories and aerodromes, both civil and military, in order to draft a report on the development of French aviation during the war. Lieut. de Fleurieu, of the Headquarters Staff of the Military Aviation Arm of the French Army, has been detailed to conduct these officers on their tour.

ITALY.

The following news has been communicated by the Italian correspondent of The Aeroplane :—

In consequence of the Fiume affair, all flying has been stopped. As on the occasion of the general strike when terrestrial vehicles were put out of action by that means, the magneto or commutator has been removed from all aero en-



IN WAR TIME.—A German D.F.W. Seaplane. This type was used at Lübeck during the war for training purposes.

gines. Even the newspaper, Milan-Rome, carriers and the Sardinian inland mail have been stopped.

In spite of this, the Naval "Ace" and Gold Medallist, Casagrande, succeeded recently in getting away from Pola with three seaplanes and several officer pilots and mechanics to Fiume, where D'Annunzio, who was just back from the Grobnitro aerodrome, welcomed them effusively. Later in the day two Samls and three SVAs from Trento joined the patriotic Aero Forces. There are thus some score of first-class pilots with their 'buses at Fiume.

Evidently, as might have been expected, D'Annunzio counted upon his fellows for news, money and other aid, and he appears to be using aeroplanes for sending news out of Fiume. There is an aerodrome there, of course.—T. S. H.

A report from Spalato states that on Sept. 22nd an Italian aviator, presumably from Fiume, dropped proclamations issued by D'Annunzio over Zara. These stated that D'Annunzio would occupy Spalato and Dalmatia as far as Cattaro as soon as he had sufficient forces.

JAPAN.

The Japanese Army has purchased some hundred or so aeroplanes from the French Government through that country's aeronautical mission.

An aviation school has been established at Tokorozawa, near Tokyo, and several others are being established. Maurice Farman pusher machines are used for elementary and Sopwiths for advanced training.

The Navy has also bought a large number of seaplanes, of which Maurice Farman (for training), Short, Sopwith, Salmson, Deperdussin, Nieuport, and Curtiss are to be the principal types.

SWEDEN.

The Danish correspondent of The Aeroplane writes :—

A paper on psychologic flying tests was read on Sept. 17th in Stockholm by Oberlehrer Rudolf Schulze, chief of the institute in Leipzig for experimental pedagogy and psychology. The lecture was attended by General Uggla on behalf of the King, further by the War Minister Nilson, some professors, and a number of flying officers.

The lecture was financially supported by the Government and the Swedish Air Traffic Co. Herr Schulze mentioned first the tests applicants were subjected to at big German concerns like the A.E.G. and the Berlin trams, and next treated the various apparatus and means of testing the various senses and the individual reactions of candidates, suggesting as a good scheme that pilots should work out for themselves difficult imagined positions and how they would behave then.

SPAIN.

The Spanish Government has considerably increased the establishment of its Flying Services by the recent addition of some 40 French aeroplanes and about 20 British.

U.S.A.

A Pioneer Honoured.

To be Honorary Companion of the Distinguished Service Order :—

Lieut.-Col. John Armstrong Drexel, United States Signal Service, Washington (formerly attached to the Air Ministry, London).

J. Armstrong Drexel will be remembered by his flying at the first Bournemouth flying meeting and elsewhere, having taken his Royal Aero Club certificate No. 14 on a Blériot monoplane at Beaulieu, Hants, on June 21st, 1910.

He subsequently set up a British altitude record of 6,595 ft. for aviator alone, on a Blériot monoplane at the Lanark meeting in August, 1910.

THE HOUSE OF BOLO.

By G. L. Dore.

Before May 1st, 1919, there were many officers in the House of Bolo dealing with matters aeronautical; they all had great acting rank and much pay, and sat in comfortable chairs before large desks, smoking cigarettes and talking to their pals or lady clerks.

These ladies, who appeared to be mostly chosen for their good looks, also drew much pay, which they spent on gorgeous raiment to please the eyes of the officers.

On the desks of the officers were many tin trays, on which were stuck labels bearing mystic words, such as "In," "Out," "Pending," "Action," and "Speak," and from time to time very small messengers would enter and place papers in the tray marked "In," then the officer would glance at the papers and put them into another tray where they would stay for perhaps a week or perhaps longer before they were moved into another tray.

Very few of those officers had been up in an aeroplane, and it was rumoured that some had never even seen one, but theirs was the task of running departments in Bolo House.

There were others who had seen Service flying in France, but they were few, and there were some who arrived before 11.0 a.m. in the morning, and who did not take two and a-half hours for lunch, and leave for home at 5 0 p.m.; but they were not many.

However, Bolo House continued to flourish, and new hotels and buildings were taken over frequently to house the staff, which continually increased.

There were many departments in Bolo House, and they all had thei little failings. "Records," whic should have known everything abou everybody, knew very little about anybody, and would answer nearly all queries by, "We have no trace of this," or, more shortly, "No trace," and any information which they did give could hardly be relied upon.

"Casualties" occasionally killed the wrong people, which was disturbing.

"The Printing Section" gave great promises which led to bitter disappointments.

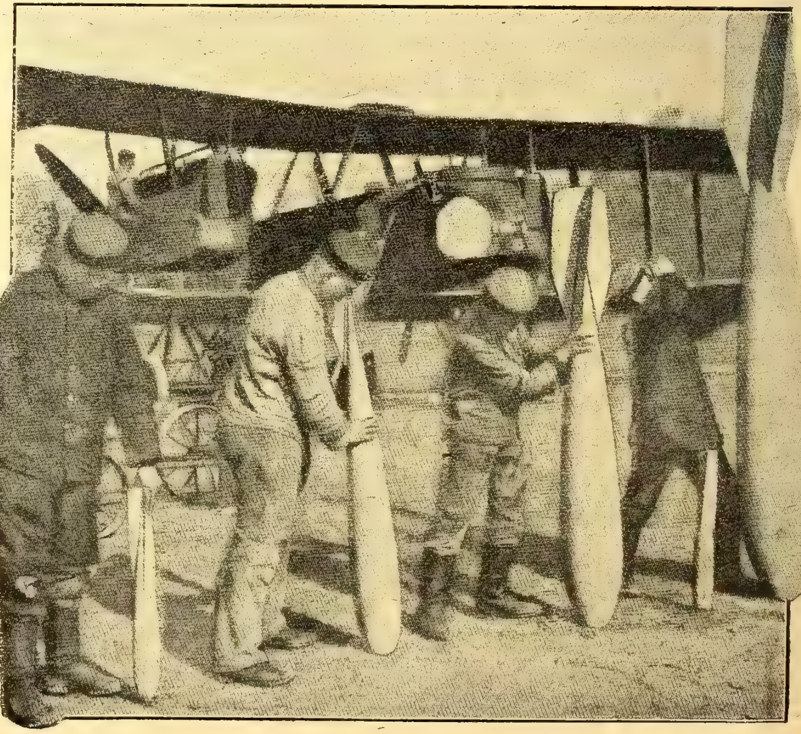
"Airships" were the most feared people; they all had great rank and looked very naval; they had splendid offices overlooking the Thames, which they never entered; but so greatly were they respected that no one dared to enter their offices even to win a waste-paper basket or a tin tray.

"Permanent Commissions" had a large staff who spent their days sorting files; many conferences were attended, and yet nothing could be decided, and no one obtained a Permanent Commission in the R.A.F.

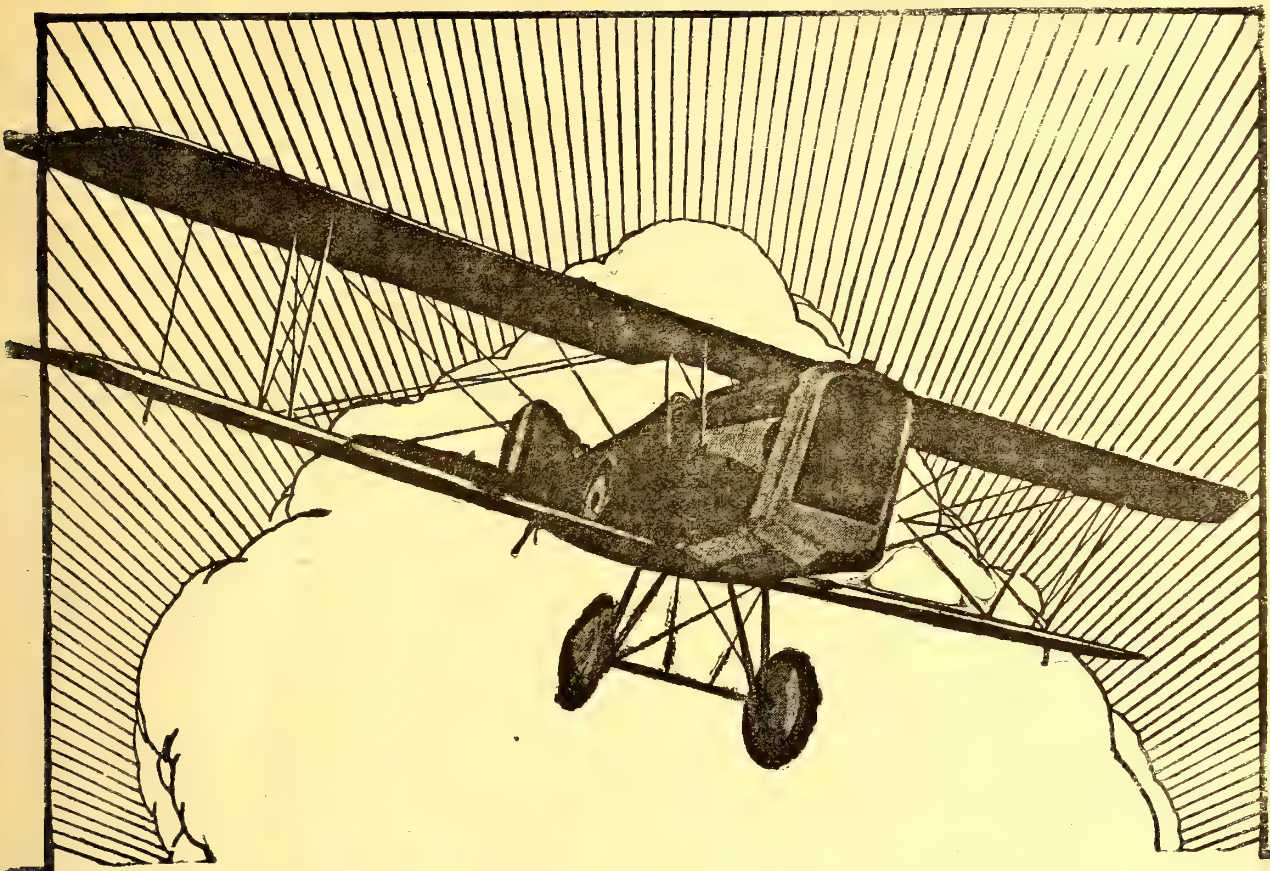
There were many other departments also; some did great things and some nothing, but all lived very happily then.

On the First of May, 1919, there was much distress, for all officers who held acting rank had to relinquish it, and all the generals became colonels, and all the majors became lieutenants, which pleased them not at all.

On the next day nearly all the officers were demobilised, despite their protests that Bolo House could not progress without them, and now they are wandering in the streets seeking work and finding none.



COMPARATIVE SIZES :—The German bombs illustrated are of the following sizes :—25 kg., 50 kg., 100 kg., 300 kg.



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F4 FIGHTER

WHICH ESTABLISHED THE

FINEST PERFORMANCE

FOR CLIMB AND SPEED AT HEIGHT.

A ROLLS-MARTINSYDE

CARRIED GOVERNMENT DESPATCHES

FROM LONDON TO PARIS

IN 75 MINUTES.

COMMERCIAL TYPE A.

INQUIRIES INVITED FOR PASSENGER—OR MAIL—CARRYING MACHINES OF THIS TYPE.
SPECIFICATIONS WILL INCLUDE

285 H.P. ROLLS-ROYCE FALCON ENGINE, or
300 H.P. HISPANO-SUIZA ENGINE.

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Note.—All above Types can be fitted with interchangeable land undercarriage or seafloats.
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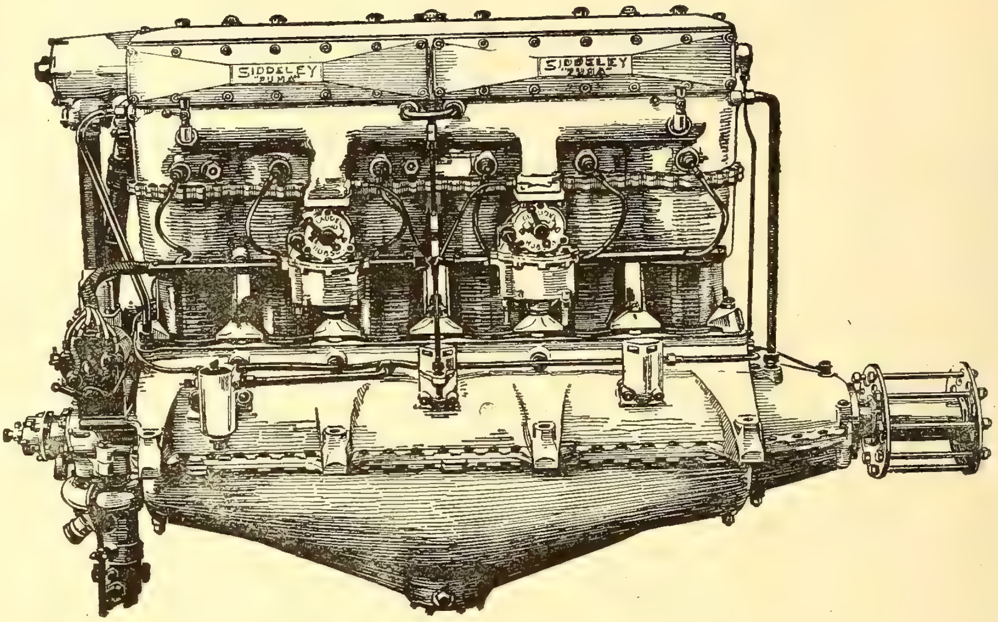


The SIDDELEY AIRCRAFT ENGINE

The Folkestone to Cologne Air Mail

THE Aerial Mail Service from Folkestone to Cologne (recently discontinued) was carried out by two squadrons of the Royal Air Force, one of which was equipped with D.H.9 aeroplanes fitted with 230 h.p. Siddeley Aircraft Engines. The journey was performed in an average of 3 hours 22 minutes. The average weight of mail carried per journey was over 160 pounds.

That the service was efficient is proved by the fact that during the week ended August 16th over 7,000 pounds of postal matter was safely carried from this country to the troops in Germany. Of 45 journeys commenced only one was not completed.

Write for Brochure "Three Announcements."

The SIDDELEY-DEASY MOTOR CAR CO., LTD., COVENTRY.
(Allied with Sir W. G. Armstrong Whitworth & Co., Ltd.)

Godbolds

The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

A Royal Flight.

On Oct. 3rd H.M. the King of the Belgians, who is at present on a visit to the United States of America, flew over the City of New York in a seaplane.

The Royal Aero Club Seaplane Competition.

On account of the Railway Strike, the Committee of the Royal Aero Club, at its meeting on Oct. 1st, 1919, decided to postpone the Seaplane Competition proposed to be held at the end of this month.

It would be interesting to know in what way a seaplane competition is influenced by a railway strike. One would have supposed that the occasion would afford an excellent opportunity of demonstrating conclusively that aircraft are not in any way dependent on railways or the vagaries of railway personnel. This cancellation would appear to prove once and for all the unfitness of the Committee of the Royal Aero Club either to organise or control the sport of flying in this country.

Readers are referred particularly to the Aero Club's official notices this week.—C. G. G.

The Professorship of Aeronautics.

Some further particulars are now available concerning Capt. Bennett Melvill Jones who was recently appointed Professor of Aeronautics at Cambridge. One is indebted to the "Liverpool Courier" for the following:—

Mr. Bennett Melvill Jones, whose appointment as Professor of Aeronautics at Cambridge has been announced, is a son of Mr. Benedict Jones, formerly of Birkenhead, now residing at Megavissey, in Cornwall.

He was educated at Birkenhead School, and in 1906 took an Exhibition for Mathematics at Emmanuel College, Cambridge, where later he became a scholar, graduating in First Class in 1909 in the Mechanical Sciences Tripos. A year later he was a shop student at Woolwich Arsenal, afterwards proceeding to the National Physical Laboratory at Teddington, where he was engaged in aeronautical research until May, 1913.

During this period, in conjunction with Dr. L. Bairstow, he carried out experiments on aeroplanes which were far in advance of anything then known, and established many principles which were quite new, but are now the foundation of aeronautics. He constructed a wind channel and aeronautical balance, which are now standard experimental instruments, and conducted many other researches. . . . . .

A Lieutenant in the London Territorials (Royal Engineers), when war broke out, he volunteered for foreign service, and was in camp for a month, when he was then sent to the Royal Aircraft Factory at Farnborough, and until May 1916, was in charge of many departments of research. In 1916, when the Government gave the late Colonel Professor Hopkinson a free hand to start an experimental station at Orfordness and to choose his own assistants, his first selection was Mr. Jones, who then carried out numerous and important experiments on aeronautical gunnery, gun sights, bombing, navigation and night-flying, which had most important results on the war. In order to observe the actual practice in war, Mr. Jones went several times to France and took part in actual air fighting. On one of these expeditions he was piloted by his younger brother, Mr. B. H. Ll. Jones, who was one of the most skilful of pilots, but has since been killed.

In July last year Mr. Bennett Jones was removed to London with the rank of Lieut.-Colonel, and became one of the Assistant Controllers of the Technical Department of the R.A.F.

He has obtained the Air Force Cross, and has been several times "mentioned."

An Air Lifeboat.

On Saturday, 4th inst., a very heavy mist came over Hounslow, and cross-country flights became impossible. So the Avros turned their attention to salvage operations.

Before dawn the drone of twin-engines was heard through the murk. The noise wandered uneasily to and fro, and it became evident that some large aeroplane was completely lost. Signals were made from the aerodrome without result; so at last an Avro was asked to perform the function of an aerial life-boat. It went up and groped about in the dark in the direction of the noise, and presently made out a large machine with 10 passengers aboard roaming unhappily round with a "four a.m. and I can't find the keyhole" air.

The Avro pilot had to go cautiously, for when he began to fly towards the liner he lost sight of the aerodrome. However, he fired Verey lights and presently attracted the attention of the liner and directed it safely to earth. It had taken an hour and a half to get to Hounslow from another London aerodrome.

Again, after dark that night, an Avro had to go up to show the way to a second large machine which had lost its bearings. (R.N.L.I., please note.)

One of the Blackburn "Kangaroos" getting off at the E.L. T.A. Show. The B.A.T. Shed is the first from the right, and the bigger Sheds housed the Vickers "Vimy" and the Handley Page machines.

The WORLD of AERONAUTICS (continued)

The Work of an Aerial Customs Office.

Every commercial aeroplane entering or leaving the country must be reported to the Officer in Charge of His Majesty's Customs and Excise at Hounslow Aerodrome. Its pilot must declare the nature of the goods carried. The organisation is now in full working order and it is the boast of the Excise Officer that no pilot leaves the country without carrying with him all information that the Customs officer at the destination aerodrome may wish to know.

Difficulties were encountered when the branch was first opened, but they are being adjusted by experience. Now there is very little delay or inconvenience, either to pilots or passengers. If an incoming machine is forced to land at another aerodrome for petrol or any other reason, the local Customs officer has to report the affair to Hounslow, and takes steps to see that none interferes with the cargo.

The railway strike practically doubled the work at Hounslow. The official records showed that 111 machines had left for the Continent and 81 had arrived up to midday, Sept. 30th.

Before the strike began the average of departures from Hounslow was three aeroplanes a day. On Monday, Sept. 29th, there were eight departures. Three machines arrived on that date and six on Sept. 30th.

The value of the cargoes varies enormously. On Sept. 30th the value of a small piece of jewellery from Paris was declared at £400. The Customs officer on his inspection is usually accompanied by a representative of the company which owns the aeroplane.

Fairy Tales.

On the return of the American Air Mission to the United States from Europe after an extensive study of European air establishments, Assistant Secretary of War Crowell made the following statement :—

"Great Britain has come to consider the dominance of the air as at least of equal importance with that of the seas, and is frankly and avowedly planning a definite policy of aerial development to that end."

Having seen and heard something of what Great Britain is doing towards the dominance of the air we can only repeat that well-known and much-used expression : "Thank God we have got a Navy."

From Aeroplanes to Poultry Runs.

One hears of aeroplane constructors turning their attention to the manufacture of many articles from wheel-barrows to window-sashes and from perambulators to poultry runs. Motor-cycles, motor-car bodies, all kinds of furniture, rowing-boats, and dozens of other articles are being made by firms that were during the war busy on the work of turning out Service and training machines. One naturally feels it wrong that the skilled employees of the great firms should have to turn their abilities to the production of comparatively mundane articles; but, at the same time, one feels that the firms that are making great efforts to find any sort of work that will keep their workpeople employed are acting in the right spirit. When the boom in commercial aviation does come they will be in a position to take advantage of it. It would be a thousand pities to see most of the skilled aircraft workers disbanded and absorbed by other industries, for it would be a matter of some difficulty to bring them together when wanted.

208 Squadron.

With reference to the notice of the 208th Squadron Dinner, would-be diners are requested to note that this dinner is postponed indefinitely, owing to the railway strike. Those who wish to attend the dinner when it does take place are asked to communicate with H. A. Zinn, Flying Officer and Adjutant, No. 208 Squadron, Royal Air Force, Netheravon, Wilts.

The S.M.M.T. Olympia Show.

The Society of Motor Manufacturers and Traders, Ltd., wish to state that there is no foundation whatever in any rumour that their November Motor Show at Olympia will be either postponed or abandoned.

Petrol Supplies.

There are adequate stocks of motor spirit in the country to meet *all* requirements. In the continued difficulties of railway transport the trouble is to get the motor spirit into the hands of those who need it for food distribution and other essential national needs. The companies which distribute petrol are confident that this can be done with the co-operation of the public and the trade.

Distribution by motor transport to garages, etc., must be discontinued, all such transport being required for other purposes. Dealers and commercial consumers requiring motor spirit must therefore call at the local depots of the distributing companies and bring with them all empty packages available, as supplies of full packages will be limited to the number of empties returned.

The hoarding of motor spirit or the use of it by those who do not really require it during railway difficulties is contrary to the public interest. The distributing companies much regret the inconvenience caused, which they hope will not be of long duration.

Excess of Zeal.

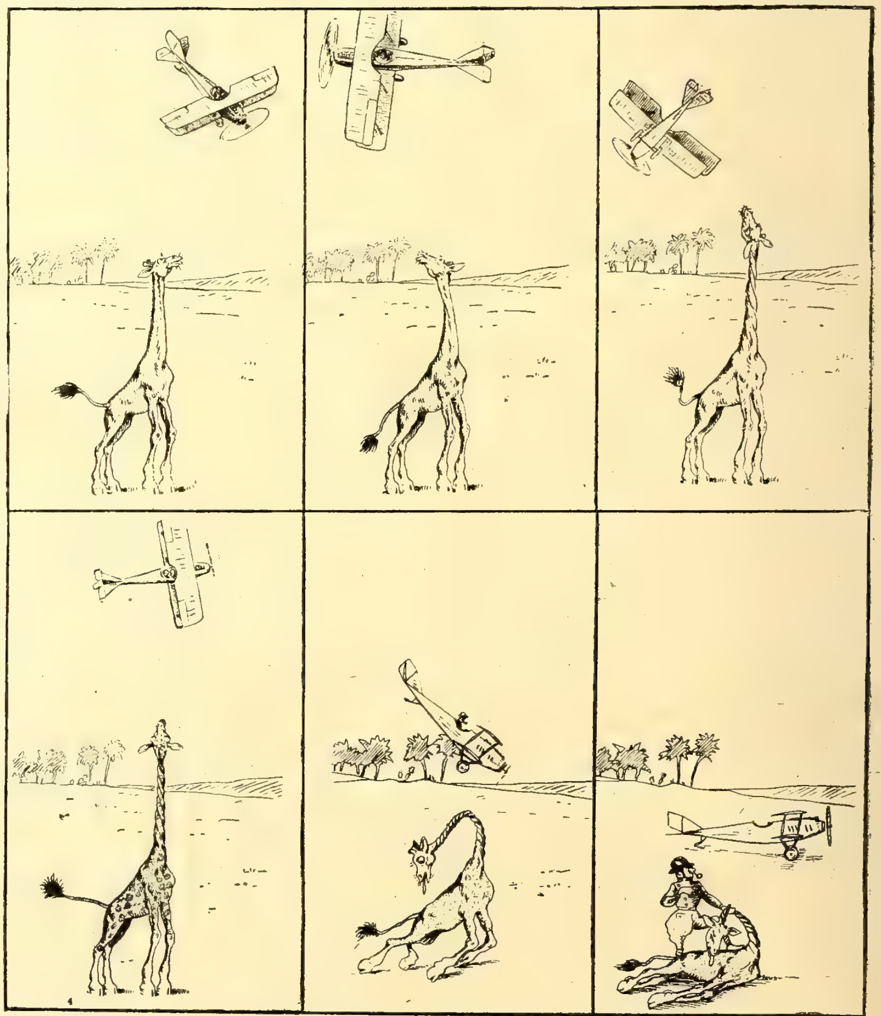
Martinsydes, Ltd., and Mr. A. Trott were summoned before the Woking magistrates on Sept. 27th in respect of dealing in mutton by retail without a registration certificate, and also for supplying meat contrary to the Rationing Order on or about Aug. 29th.

Mr. Symes said he was prepared to plead guilty to the summonses. Martinsydes had a farm, and reared a number of sheep. These were killed off in time, the meat being brought to Woking and sold to the employees at ordinary prices.

The firm were under the impression that they were entitled to give their own men preference. They were misled by inspired articles asking people to keep pigs, rabbits, etc. The works canteen catered for 2,000 men, and was started under the Welfare scheme.

The firm tendered their sincere regret to the Local Food Control Committee that such an offence should have occurred. Mr. Symes hoped that the Bench would take a lenient view of the occurrence. If convicted the firm would be barred from being represented on the Food Control Committee.

The Bench dismissed the whole of the summons upon payment of costs, and Mr. Symes expressed his thanks to them.



Those who protest against the proposed scheme to hunt Caribou by aeroplane may regard with greater favour the method of giraffe-hunting by aeroplane as suggested by the German paper "Luftpost."

Beardmore

The Ruling Factor

The Historic reputation of the
Beardmore Aero Engine
results from its all-round superiority

This has been proved up to the hilt in record after record previous to the War—and by its own particular characteristics boldly shown during the War. The History of the Beardmore is not based on "meteoric stunts" but on sound service in every case. This service has always been available from the Beardmore—is now—and always will be available under the most exacting phases in Aviation.

These claims are not "mere rhetoric" but are proved by the fact that to-day a large number of leading Aircraft Manufacturers are adopting the

Beardmore Aero Engine
As Standard Post-War Power Unit.

This Beardmore qualification permits its claim of being the best Engine for Commercial Transport in the Air.

BEARDMORE AERO ENGINE, LTD.
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AeroEngines

A BOON TO COMMERCIAL FLYING.

One of the surest signs of the stability of a new industry is given when one finds business men of proved ability and business firms of high standing launching out in a big way in that new industry. There has always been a suspicion at the back of the mind of everybody concerned with aircraft, that the interest taken by the big armament firms in aircraft merely indicated that firms of that class, knowing that there was a war coming, began to take an interest in aircraft in the early days so as to be in the market with war aircraft when the war came.

It is, therefore, satisfactory to find that some big armament firms so far from dropping their interest in aircraft are actually tending to take a keen interest in the development of commercial aeronautics.

Among the firms which have done much for aircraft during the war, one may certainly place the firm of Sir Wm. Beardmore and Co., Ltd. Apart from the fact that the firm has built a very large number of excellent aeroplanes, the firm deserves particularly to go down to history as having provided our Flying Services with one of the most satisfactory and thoroughly reliable aero-engines that has ever been constructed; and, incidentally, one of the first aero-engines produced in this country.

The immense foresight of Sir William Beardmore, Bart., chief of the firm, was shown when he purchased the British rights of the Austro-Daimler engine some two years before the war. Those most competent to judge held, then, that the Austro-Daimler was certainly one of the very finest aero-engines in the world, although, at the time, the ultra-light air-cooled engines threatened to displace water-cooled engines for all purposes.

In spite of this, Sir Wm. Beardmore gambled on the Austro-Daimler. When the designs reached the Beardmore works result was the 120 h.p. Beardmore, which was just coming into its own when war began. It was an eminently reliable engine, but was a trifle heavy for its power. Naturally, the Beardmore people proceeded to improve it, and during the first year of war produced the 160 h.p. Beardmore, which was one of the very few engines produced in 1915, and still in use at the end of the war. In fact, to-day there are many excellent war pilots who hold that as a machine, which is guaranteed to get its crew from one place to another without fail in any weather, the old Beardmore-engined Armstrong-Whitworth is still in the very first rank. Lieut.-Col. G. L. P. Henderson's recent tour to the Riviera and back in 21½ hours' travelling time is a proof of the statement and of the fact.

With such a record as producers of engines, it is not surprising that the Beardmore firm should base its first move in commercial aeronautics on the reliability and popularity of the 160-h.p. Beardmore engine. The immediate future policy of the firm is one which, when one comes to consider it carefully, is of the soundest and at the same time one of the most useful moves for the benefit of commercial aeronautics that can possibly be made.

As Mr. Luther, who, as is well known, has handled Beardmore aero-engines from their beginning, pointed out to the writer recently, in the present state of civil aviation the question of cost in relation to work done has to be considered far more seriously than has been the case during the past four years, or in fact during any period in the history of aviation, for we are now past both the experimental stage and the "power-at-any-price" stage, and have to settle down to plain business propositions.

The Beardmore people are convinced that this must be realised by all practical men who have an opportunity of observing the amount of service obtained from engines designed exclusively for war purposes in relation to their cost. Also this must be taken in relation with the influence that the war will have upon future production costs.

Now the number of Beardmore engines and parts thereof at present existing represent an enormous amount, both in cash and in potential value, to commercial aeronautics, and this value cannot be adequately used unless it is collected and handled in a manner which will give the aeroplane manufacturers the best possible service. It is equally important that behind the potential value of these engines there should be an organisation of experience and resource, both material and financial, upon which manufacturers can rely.

The scheme of the Beardmore Company therefore is more or less as follows :—The Company has purchased every 160-h.p. and 120-h.p. Beardmore engine in the possession of the Government, and also all the spare parts available for those engines. The engines will be taken to the firm's works at Parkhead, where they will be dismantled, thoroughly examined and improved in certain details where war experience has shown slight alterations to be desirable. The engines will then be rebuilt, and each one will be given a thorough power and endurance test, after which it will be offered for sale to aeroplane manufacturers with a first-class guarantee, and at a price which cannot be touched by any engine of similar power built under present-day industrial conditions.

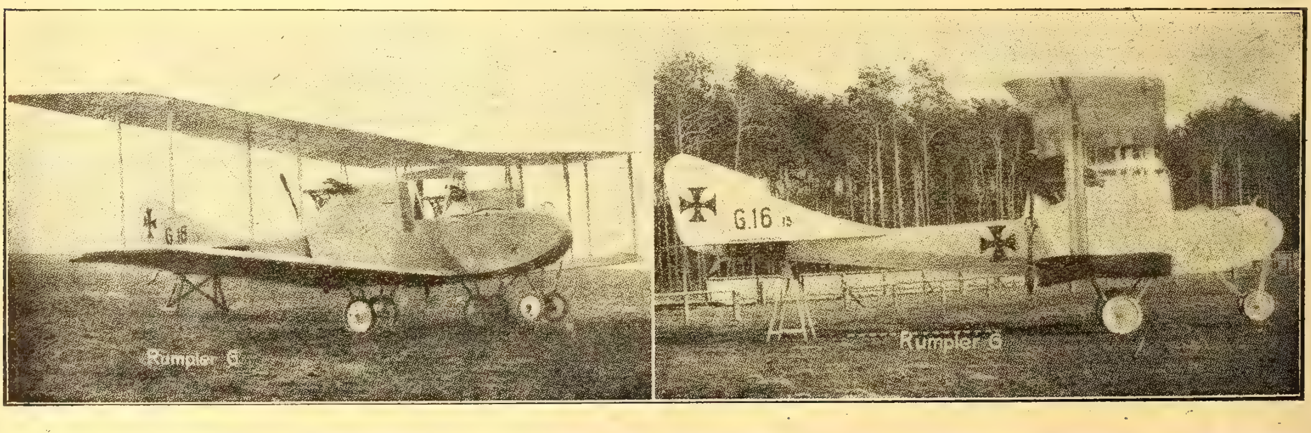
Under this scheme aeroplane manufacturers will be enabled to put on the market thoroughly reliable passenger-carrying aeroplanes to the number of, at any rate, some thousands, at a price which will make commercial aviation a business proposition. The reliability of the engine is bound to increase public belief in the reliability of aircraft in general, and so the foundations may be laid for bigger business in more expensive aeroplanes and engines in time to come.

When one discloses the fact that this deal with the Government runs into a six-figure transaction, it may be realised that Sir William Beardmore has considerable faith both in his own engine and in the future of aviation. It would appear that the doubt of the general public concerning the commercial side of aeronautics at present is largely caused by the realisation on the part of the business man of the fact that aeroplanes have still to prove their ability (now that Government support is withdrawn) to show a return on the capital invested.

Anything that tends to reduce the initial cost and to inspire public confidence must therefore serve to make the immediate prospects of aviation more encouraging. This at any rate appears to have been the inference of Sir William Beardmore and the chiefs of his departments when reviewing the prospects, and one agrees that their inference is correct.

This move on the part of the Beardmore Company is bound to be of considerable value to the whole Aircraft Industry during the next year, but one may state that it is only the first move in the Beardmore policy. It would perhaps be inadvisable to go into further details as to later moves, but in general one may say that the Beardmore firm is by no means forgetful of the need for high power engines for big machines, and one may expect to see some very interesting developments in this direction when the proper time comes. And then the experience of the Beardmore Company in building thoroughly reliable engines in smaller powers will naturally give confidence in their newer productions.

On the whole, one considers that not only is the Beardmore firm to be congratulated on the foresight of its chief in taking this bold step, but that the Aircraft Industry, as a whole, is to be congratulated on the fact that Sir William Beardmore's faith in the future of flying has induced him to sanction such a big scheme.—C. G. G.



AN INTERESTING EXPERIMENT.—A curious twin-engined Rumpler biplane of 1916 or thereabouts. The engine-housing and under-carriage arrangements are particularly interesting.

THE STRIKE.

The Railway Strike has demonstrated in a remarkable degree how the Aeroplane may not only be a substitute for the steam engine but how it may actually supersede it.

Nieuport machines were at once requisitioned by the Government and are successfully carrying newspapers, mails and parcels to all parts of the country in record time. Business men take long and short distance trips in safety by 'plane, and thus become independent of railways.

Clearly the strike has shown the eminent adaptability of the Aeroplane for commercial purposes.

Illustrated above is the
Nieuport 2-Seater Passenger 'Plane.

BRITISH
NIEUPORT
& GENERAL AIRCRAFT Co Ltd

CRICKLEWOOD, LONDON, N.W.2

Telephone :
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(3 lines).

Telegrams :
NIEUSCOUT, CRICKLE,
LONDON.

ENTHUSIASM AND HARD WORK.

Those who wish to find evidence of the deep depression that is said to have enveloped the aeronautical world should certainly not visit the larger and more enterprising firms in the industry.

While daily newspapers are telling their readers that civil aviation is a wash-out, the enthusiasts are carrying on work that will make the year 1919 remembered in history as the period that saw the dawn of what is destined to be one of the world's greatest industries. The spirit that animates many firms is well exemplified by the words of Major W. G. McMinnies, of the Avro Company, who, in a conversation the other day, cheerfully remarked that we all ought to be very grateful for living in the greatest time in history which gives all of us such magnificent opportunities.

This summer A. V. Roe and Co., Ltd., have given pleasure flights to over 30,000 people at an average price of one guinea per flight. Assuming that a distance of 10 miles is covered in each of the flights, we may say that the total mileage covered by these passengers is equivalent to twelve and a half times round the world. In this great distance there has only been one slight mishap to a passenger, who had his jaw injured in a crash. These figures should do much to inspire confidence among the general public.

Useful Work.

At the present time there is no doubt that these pleasure flights are playing a very useful part in the development of civil aviation. The thousands of people who have flown for the first time this summer almost invariably describe their experiences with enthusiasm to their friends, who become anxious to fly themselves.

Those who have flown once for pleasure are not likely to hesitate to use an aeroplane when urgent business requires them to travel quickly from place to place. One feels, therefore, that this work is educative and that the effect can only be good.

One makes this comment because in certain quarters one has heard it suggested that "joy-flying," as it is commonly called, is not serious aviation at all and is doing no good to the industry. There is no doubt that it is doing good, as it has demonstrated to the public that flying is a practical and pleasurable method of travelling.

The First Regular Service.

A. V. Roe and Co., Ltd., claim to have been the first firm to start a regular aeroplane service in Great Britain. About May 10th of this year they began daily flights between Manchester and Blackpool every day of the week, excluding Sunday, and this service was running regularly without any trouble whatever until Sept. 30th.

Three-seater machines with Le Rhone engines have been used. The machines left Blackpool at 12 noon, reached Southport at 12.15 and Manchester at 12.45, and the fares charged were five guineas for the single journey and nine guineas for the return

During ten days a regular service was in operation between Lake Windermere and Douglas, Isle of Man, for the purpose of carrying copies of the "Daily News" to the island. Avro seaplanes were used, and these were able to make the journey in from six to eight hours less time than that taken by train and boat.

During three weeks in July the "Evening Standard" was carried from London to Southsea and Brighton. During this period there was only one forced landing, and on that occasion another machine was sent out, took the papers from the one that had landed, and completed the journey, so very little time was wasted.

An Amphibious Machine.

From a practical point of view the short flights from London are not so successful as longer journeys, because when passengers or goods of any sort have been taken to Hounslow Aerodrome and then conveyed by air to their destination the same time has been taken as would be occupied by a train journey. A seaplane that could land on the Thames close to the newspaper offices and then fly to the coast towns would seem to be the solution of the difficulty. The ideal machine would be amphibious.

A large number of cross-country flights, mostly for business purposes, have been made. When the American N.C.4 made the first Translantic flight the "Daily Mirror" sent a photographer to Plymouth by air to obtain photographs of the machine and crew, which could not possibly have been obtained in the same time by any other means.

About the same time two Guards officers in London told A. V. Roe and Co., Ltd., that they wished to get to a town in Rutland to attend a birthday dinner-party, but had to be back for duty in London the same evening. A flight was arranged. They left London at 5.30 in the afternoon, arrived in good time for dinner, and were back for duty in London before 10 o'clock.

A Spirited Effort.

The Derby Day flights will be remembered by many. The company had undertaken to fly people down to the racecourse, but many difficulties were in the way. Aeroplanes were prohibited from landing within two miles of the course, so the company hired a field about two and a half miles away. It was raining heavily on that day and there was a ground mist which gave the pilots some difficulty. Seven machines flew in formation and in their flights carried 44 people.

This effort must be regarded as a very spirited one on account of the difficulties which would have caused a less enterprising firm to abandon it. After the flights had been booked it was discovered that, as the regulations stood, it was illegal to make a charge for passenger flights. The money was therefore returned to those who had booked seats and the flights were given free of charge. This shows a spirit of determination to serve the public in spite of dilly-dallying obstruction, and is pleasing proof of the enthusiasm that is to be found in the industry.

At the present time the company is ready to take passengers to any part of the country at almost a moment's notice, and they have drawn up a tariff of regular charges as follows :—

List of Prices for a 3-seater Avro for 1 or 2 Passengers.

Hounslow to—	Single.			Return.			Approx. time taken for Single Trip.	
	£	s.	d.	£	s.	d.	hr.	min.
Harwich Folkestone Dover Southampton	18	15	0	25	0	0	1	0
Birmingham Bristol	26	0	0	35	0	0	1	25
Grantham	28	2	6	37	10	0	1	35
Nottingham	32	16	3	43	15	0	1	40
Sheffield	37	10	0	50	0	0	2	0
Doncaster Hull	43	14	0	58	5	0	2	25
Manchester Leeds	48	0	0	64	0	0	2	45
Swansea Liverpool	54	15	0	72	10	0	3	0
Plymouth Barrow	60	0	0	80	0	0	3	30
Holyhead Newcastle	67	10	0	90	0	0	3	45
Glasgow Edinburgh	112	10	0	150	0	0	6	0

A charge of £1 per hour is made when the machine is retained on the ground, up to a maximum of £10 per day. An additional charge of £3 10s. per hour is made for a five-seater Avro.

Engines for Commercial Aviation.

Mr. Priest, with whom the prospects were also discussed, expressed the opinion that the future of commercial aviation depends upon the designers and manufacturers of aero-engines. He pointed out that practically all the engines of to-day were designed for war use. High efficiency has been the chief consideration, and such points as economical running have not received the attention that is necessary when engines are to be produced for purely commercial purposes.

In striving for high efficiency engines have been produced which develop extremely high power in proportion to their weight, but the perhaps necessary result has been that such engines require very frequent overhauling. In war time, when large numbers of mechanics were available, this was not such a grave objection as it will be in commercial aviation at a time when skilled labour is expensive.

Mr. Priest thinks that for civil aerial transport work an engine is required which can be run economically with regard to fuel and oil and which will give long service without the constant attention that was required by the super-efficient aero-engine developed during the war. He does not think that the commercial engine need necessarily be water cooled, but thinks it probable that there is a great future for the air-cooled radial type.

Long-Distance Routes.

With regard to regular services, he does not think that there is much chance for development in Great Britain, though a limited amount of commercial flying might be done between England and Ireland. Long-distance routes between England and the Continent, and to countries that have not highly developed systems of railways, will offer the best chances for firms that intend to open up regular services.

RECENT

AIRCO SUCCESSES

THE AERIAL DERBY, 1919

THE winning machine, an Airco 4R, with a Napier engine, averaged a speed of 129 miles an hour—since declared a record by the Royal Aero Club. Two other Airco machines started, the Airco 4, with a Rolls-Royce engine, and the Airco 9, with a Siddeley "Puma" engine. The Airco 4 finished third, and the Airco 9 fifth. Of the seven machines finishing three were Aircos.

FIRST
THIRD
AND
FIFTH

AMERICAN AERIAL DERBY

IN this race, flown over a course 1,042 miles in length, the winning machine, an Airco 4, averaged throughout a speed of 136 miles an hour; while the second and third places were also secured by Airco 4's.

FIRST
SECOND
AND
THIRD

INTERNATIONAL RACE AT AMSTERDAM

IN this contest, flown in connection with the Aircraft Exhibition at Amsterdam, there were between thirty and forty starters, including the fastest of the French and Italian machines. The first and second speed prizes were won by Airco machines. The Airco 9R, with a Napier engine, the fastest machine in the race, covered the closed circuit of 130 miles at a speed of 145 miles an hour; while the second fastest time was that of the Airco 4A, with a Rolls-Royce motor.

FIRST
AND
SECOND
SPEED
PRIZES

THE AIRCRAFT MANUFACTURING COMPANY, LIMITED

London Office: 27, BUCKINGHAM GATE, S.W.1.
Chairman (and Founder, 1911), Mr. G. HOLT THOMAS.

Concerning the alleged assistance that the Government has given to those who are trying to develop commercial aviation Mr. Priest speaks bitterly. He thinks that if the Government had been a rival firm trying to crush competitors it would have acted exactly as it has been acting since the Armistice.

A case in point may be quoted. After the Armistice it became clear to A. V. Roe & Co., Ltd., that very large numbers of machines owned by the Ministry would be sold. The firm entered into negotiations to find out if it were possible to repurchase the machines, and went so far as to make a definite offer. This was refused on the grounds that the Disposal Board was unable to find out how many machines there were actually in hand!

Since then Avro machines have been sold by the Disposal Board, it is believed to purchasers all over the world, and A. V. Roe & Co., Ltd., have not been informed as to where the machines have been sent, so have been unable to follow up the business and offer their experience and resources to the purchasers.

It is thought that the Disposal Board may, for example, have sold Avro machines to Japan, where it is quite possible that they have simply been purchased as samples and may be copied.

Such methods can only lead to disaster in the industry. Had the firm been allowed to repurchase the machines, representatives would have been sent out to open negotiations with foreign countries and business would undoubtedly have resulted and continued. The Disposal Board has merely been distributing all over the world, at bargain rates, machines that incorporate the results of years of experiment, so that foreign competitors may pick the brains of British designers at their leisure.

The entire methods of disposing of aircraft are, Mr. Priest thinks, contrary to the interests of the industry. Instead of helping British manufacturers to gain the world's market, the Disposal Board seems to have regarded itself as an aircraft dealer determined to under-sell and to force its rivals (the manufacturers) out of the business. P. A. B.

"AIRCRAFT IN PEACE AND WAR."

Under the above title a very handsome brochure has been issued by the Blackburn Aeroplane and Motor Co., Ltd., of Leeds, in celebration of the tenth anniversary of the foundation of their business.

The Blackburn Aeroplane and Motor Co., Ltd., was founded in 1909 by Mr. Robert Blackburn, and so may be ranked as one of the few companies who were in a position to turn out aircraft at a moment's notice and thus helped to keep the original Air Services at the outbreak of war equipped with aircraft.

From August, 1914, up to the cessation of hostilities they were engaged in making numbers of aircraft of both their own and outside design.

Most of the text is written by Sir John Foster Fraser, F.R.G.S., who was one of the various people engaged by the British Government in propaganda work, and gives a complete description of the work and the works of the Blackburn Co. from their foundation to the present day, together with an idea of the future policy of the firm.

The whole brochure is very well printed on art paper and is illustrated with photographs of the machines built by the Blackburn Co. to their own and many other designs, views of the works, scale drawings and specifications of some of the machines built by them for war services, etc.

The company wish to point out that they will be very glad to supply a copy of this book to any person through whom they may hope to get into touch with business—that is, to anyone connected with the Press, to those having official or commercial connections with foreign countries, or to anyone connected with the Aircraft Industry either in this country or abroad.

A COLONIAL PROGRAMME.

The Nieuport and General Aircraft Company, of Cricklewood, London, has arranged an extensive Colonial programme. As commercial flying in this country has not developed yet to any great extent and shows no sign of doing so for some time to come, the company is not building many aeroplanes. Telephone switchboards and similar articles are being made. Complete plans have been made for building their several types of commercial machines at short notice, but as yet, owing to the number of machines demobilised from the R.A.F. which can be bought fairly cheaply, there is very little demand for new machines.

In the Colonies there is a great immediate future for commercial aviation, and the Nieuport Company are not blind to the possibilities. They have sent out representatives to Canada, South Africa, and India, and Mr. Sydney Pickles is acting as their agent in Australia. A British Nieuport machine will be sent to him.

The Colonial representatives of the company are all pilots late R.A.F. Capt. Reginald S. Carroll, A.F.C., is the representative at Bombay, for Asia. Capt P. C. C. Passman is the representative at Cape Town, South Africa.

A scheme has been prepared to cover South Africa with a network of services, and has been submitted to the Government. It is hoped that Capt. Passman will interest the financiers of the country so much that South African capital will be put into the enterprise.—G. L. Dore.

THE ROYAL AERO CLUB.

SPECIAL COMMITTEE MEETING.

A Special Meeting of the Committee was held on Wednesday, October 1st, 1919, when there were present:—Group-Captain C. R. Samson, C.M.G., D.S.O., R.A.F., in the Chair, Mr. Ernest C. Bucknall, Lieut.-Col. F. K. McClean, Air-Commodore E. M Maitland, C.M.G., D.S.O., R.A.F., Lieut.-Col. Alec Ogilvie, and the Secretary.

Election of Members.—The following New Members were elected:—The Hon. Mrs. Bethell, Ronald William Carmichael, Leo Austin Walsh, Vivian Claud Walsh.

Schneider Trophy.—Mr. Priest, of Messrs. A. V. Roe and Co., attended before the Committee in support of the protest lodged by his Company against the elimination of the Roe Seaplane from the Schneider Race.

Royal Aero Club Seaplane Competition.—The report of the Technical and Competitions Committee was presented by Lieut.-Col. F. K. McClean.

On the motion of Lieut.-Col. Alec Ogilvie, seconded by Mr. Ernest C. Bucknall, it was unanimously resolved: "That on account of the Railway Strike, the Royal Aero Club Seaplane Competition proposed to be held at the end of October, 1919, be postponed."

HOUSE COMMITTEE.

A Meeting of the House Committee was held on Monday, September 29th, 1919, when there were present:—Mr. Ernest C. Bucknall, in the Chair, Mr. Herbert J. Corin, and the Secretary.

THE FLYING SERVICES FUND.

A Meeting of the Flying Services Fund Committee was held on Friday, September 26th, 1919, when there were present:—Group-Captain C. R. Samson, C.M.G., D.S.O., R.A.F., in the Chair, Mr. Chester Fox, Squadron-Leader T. O'B. Hubbard, M.C., R.A.F., and the Secretary.

Grants and Allowances.—The following Grants and Allowances were made:—

(13) The School Fees of £3 15s. of the son of the father of a Lieutenant in the Royal Flying Corps killed on active service.

(105) An allowance of £3 a month for six months to the mother of a Cadet who died on active service.

(112) An allowance of £3 a month for six months to the widow of a 1st Class Air Mechanic in the Royal Air Force killed on active service.

(129) An allowance of £4 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Flying Corps killed on active service.

(141) An allowance of £4 a month for six months to the widow of a Private in the Royal Air Force who died on active service.

(145) An allowance of £4 a month for six months to the mother of a Private in the Royal Flying Corps killed on active service.

(148) An allowance of £1 a month for six months to the mother of a Private in the Royal Flying Corps who died on active service.

(153) An allowance of £2 a month for twelve months to the widow of a 2nd Class Air Mechanic in the Royal Flying Corps killed on active service.

(161) An allowance of £2 a month for six months to the mother of a Private in the Royal Air Force who died on active service.

(164) An allowance of £4 a month for six months to the mother of a Private in the Royal Flying Corps who died on active service.

(172) An allowance of £2 a month for six months to the widow of a Private in the Royal Flying Corps killed on active service.

(178) A Grant of £10 to the widow of a Sergeant Mechanic in the Royal Flying Corps killed on active service.

(183) An allowance of £1 a month for six months to the mother of a 3rd Class Air Mechanic in the Royal Flying Corps who died on active service.

(230) An allowance of £1 10s. a month for six months to the mother of a 3rd Class Air Mechanic in the Royal Air Force killed on active service.

(231) An allowance of £2 a month for six months to the mother of a 2nd Class Air Mechanic in the Royal Air Force killed on active service.

(251) The School Fees up to £50 per annum of the brother of an ex-Flight Sub-Lieutenant in the Royal Naval Air Service incapacitated on active service.

(253) An allowance of £4 a month for six months to the widow of a Private in the Royal Air Force who died on active service.

(258) An allowance of £3 a month for six months to the mother of a 1st Class Air Mechanic in the Royal Air Force who died on active service.

(263) An allowance of £3 a month for six months to the mother of a Private in the Royal Air Force who died on active service.

(265) An allowance of £2 a month for three months to the mother of a 2nd Class Air Mechanic in the Royal Flying Corps who died on active service.

(268) An allowance of £2 a month for three months to an ex-A.M.I. in the Royal Naval Air Service incapacitated on active service.

THE FIRST DIRECT NON-STOP TRANSATLANTIC FLIGHT.

There has been a widespread expression of opinion that the first direct Transatlantic Flight by Sir John Alcock and Sir Arthur Brown on a Vickers' "Vimy" Rolls Biplane on June 14th-15th, 1919, should be permanently recorded in the Club House.

The idea has been fully considered by the Committee, and they have decided to obtain portraits in oils, for hanging in the Club, of both Sir John Alcock and Sir Arthur Brown.

Sir John Lavery has very kindly consented to paint the portraits at a purely nominal figure, the canvases being 30 in. by 25 in.

A subscription list has been opened and subscriptions limited to £1 1s. are invited towards the cost.

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THE WEEKLY COMMENTARY.

Commenting upon a paper on "The Scientific Progress of Aviation during the War," which was read before the British Association by Mr. Bairstow, Capt. Sayers points out that the author really admits that the progress made is very small. If this fact is properly realised by those who are concerned in the scientific study of aerodynamics, there is some prospect of a real advance in knowledge.

A Siemens Schuckert single-seat fighter, fitted with the Siemens rotary engine, is described in this issue. This machine was produced too late to take part in the war, but it is understood to have given very fine results on its tests. A note upon, and a drawing of the Siemens rotary engine, is also given. The opposite rotation of the cylinders and the crankshaft is a novel feature in a practicable engine. Though the principle has been often suggested, it has never before been successfully employed.

Aeroplanes produced by the firm of Vickers, Ltd. are the subject of this week's instalment of "Modern British Aeroplanes."

THE SCIENTIFIC PROGRESS OF AVIATION DURING THE WAR.

BY CAPT. W. H. SAYERS, LATE R.A.F.

A paper read by Mr. Leonard Bairstow, F.R.S., C.B.E., before "G" Section (Engineering) of the British Association during their recent session at Bournemouth, bearing the above title, raises quite a number of fields for instructive discussion.

In the first place, the paper, as a whole, serves to accentuate the fact that aviation, in so far as the design of aircraft is concerned, has made little, if any, progress during the war, since, if it had, Mr. Bairstow would scarcely have refrained from mentioning the fact. In actual fact, the main part of Mr. Bairstow's paper deals with the subject of the relation of model tests to full-size results.

In this matter Mr. Bairstow is perfectly frank. He says :—

"No single case of fluid motion round objects used in aviation has as yet been deduced from a solution of the equations of motion, and the process followed has been frankly empirical. One of the most important early problems was the finding of that shape of aeroplane which gave minimum resistance for a given lift due to motion. Within somewhat narrow limits this problem has been solved, and for some time it has been possible to say that an aeroplane of good design would fly at a speed known from its weight and horse-power. Similar standard relations apply to the rate of climb and to the height to which it can climb."

If this means anything—and it must be presumed to—it must mean that the properties of aerofoils and the general proportions of the various parts of an aeroplane to give the minimum of resistance have been so fully and definitely established by model experiment that, armed with the results of these experiments, one reasonably capable designer is as good as any other.

In actual fact this standardisation of aeroplane performances for any given weight per horse-power has little to do with the accuracy or reliability of model tests or of any other determination of the best form for aerofoils. It is almost entirely the result of war conditions. A designer attacking the problem of turning out, let us say, a single-seater fighter against time and in competition with other designers, quite naturally based his attempt on the known performance of the best existing machines of similar type.

Under the special conditions no extensive experimental work was possible, and for safety's sake standard forms for aerofoils, strut sections, and the like had to be used, with at the most very minor modifications.

The loading of any standard aerofoil section was fixed within fairly narrow limits by the landing speed called for—and to all intents and purposes very little was left to the individual designer except to keep his structure weight, and hence his total weight, down to the minimum.

This weight per h.p. in practice has been the only important variable within the average designer's control, and there is little remarkable in the fact that performance can be measured fairly accurately as a function of this particular variable alone.

Had the conditions of the past five years uniformly called for a landing speed of between 20 and 30 miles per hour instead of from 40 to 55, the standard curves of maximum speed, of climb, and of ceiling plotted against weight per h.p. would have been quite different from the present ones, and the fact that so empirical a method of predicting performance is so generally accurate proves nothing but that aeroplane design is in a state of stagnation.

The only fact of real importance is that over the range from an S.E.5 to a Handley Page size makes no appreciable difference to the performance for a given weight per h.p., which is to say in effect that within the present limits of size of aeroplanes there is no marked change in the general character of the air disturbance set up in flight, and consequently no important "scale effect."

Mr. Bairstow then proceeds to discuss, purely from the scientific point of view, the whole question of the application of the result of tests on models to the prediction of full-size effects.

The whole theory of the validity of model tests rests on the assumption that the nature of the air flow round the model under test is similar to that of the flow round the full-size component under working conditions.

When a fluid of high viscosity, which for the present purpose may be approximately rendered as of great stickiness, is forced past an obstructing body at a low speed, this stickiness prevents any abrupt changes in the velocity of adjacent particles of fluid, and the flow in consequence is smooth and steady, with quite slow changes in either the direction or velocity.

If either the velocity of the flow past the obstacle be increased, or the viscosity of the fluid be decreased to a sufficient extent, this "stickiness" is overcome by the inertia of the moving particles of fluid, and sudden and abrupt changes, both of velocity and of direction, may occur, leading to an entirely different type of flow, which may produce a total change in the resistance characteristics of the obstacle.

It is fairly obvious that the determining factor of a sudden change of flow in a fluid of given density and viscosity is some measure of the maximum acceleration impressed upon the fluid in passing round it, and that thus both the shape and the size of the obstacle will influence the conditions under which similar forms of flow will occur.

Upon this line of reasoning it is only safe to assume that the results of a wind-tunnel test on a model of L feet span can only be applied with certainty to a scale enlargement in every detail of that model of n times the span when the model is tested at an air speed n times that of the full-sized machine.

Thus, if the machine of which a model is to be tested be of 36 ft. span and its resistance characteristics are required at 100 m.p.h., then a 36 in. span model tested at 1,200 m.p.h. should give directly applicable results.

Unfortunately it does not, because the general theory of the similarity of flow assumes that air is incompressible by the forces set up in its movement—an assumption fairly close to the truth at low velocities, but very far from it at speeds approaching that of sound—and it is in most cases impossible to arrange a sufficiently high air speed in a wind tunnel to render model tests directly applicable to full-scale work without running into this difficulty.

It is frankly admitted by Mr. Bairstow that the changes in the resistance of two similar bodies which are caused by differences of dimension or differences of velocity, cannot yet be calculated, and that the whole basis of the application of model tests to full-scale work is the experimentally established fact that within limits it is found that the resistance of a model in a wind tunnel and a machine in flight do vary as the square of the dimensions of the two bodies and as the square of the air speeds. Although the resistances do vary from the square law within the limits now in question, the variations seem to be slow and regular, and it is therefore assumed that the type of air flow round the model is nearly similar to that round the full-scale machine.

Mr. Bairstow states that attempts at the mathematical solution of the conditions of flow in certain typical cases are now being attempted at the N.P.L.—with the assistance of Miss Cave—and that it is hoped in time to achieve some success in this effort, and thereby place the relations between model and full-size experiments upon a sound mathematical basis.

In the meantime Mr. Bairstow's lecture may be welcomed as a very frank admission that model tests can be relied upon to just that extent to which full-sized practice bears them out, and no further.

As it is a fact admitted by the N.P.L. authorities that, although in certain cases there is only a negligible difference between the lift coefficients of a model and of a full-size wing, there are in the same cases differences of the order of 15 per cent. between the drag coefficients on the two scales, it seems fairly just to assume the possibility of very much greater divergences between models and full-size machines when changes in the form of wings, etc., which lead to greatly different values of the pressure coefficient are involved.

It may therefore be taken as an admitted fact that model experiments, unsupported by full-size tests, are at present of little value to anybody. There is some reason to believe that a great deal of harm has been done in the past by a failure on the part of the N.P.L. and the Advisory Committee for Aeronautics to recognise this, and it is to be hoped that in future, under Mr. Bairstow's guidance, this error may be avoided.

The accompanying photograph shows an Airco D.H.4 machine with a Napier "Lion" engine, 450 h.p., which was flown by Capt. Gathergood, A.F.C., for the first time in the Aerial Derby. Since then, as may be seen, the wing arrangement has been altered, and it was flown by Capt. Gathergood to the E.L.T.A. Exhibition at Amsterdam in 2 hr. 10 min., this being the fastest time for the journey. While in Amsterdam, he flew the same machine in a race of 137 miles, which he won at an average speed of 145 m.p.h., against 35 competitors. The next machine in the race took 10 minutes longer over the course. These performances, and the non-stop flight to Madrid in 7¾ hrs., as the power plant of an Alliance biplane, prove the Napier to be in the very first rank of aero engines.

From the early days of aviation

The "Bristol" Aeroplanes

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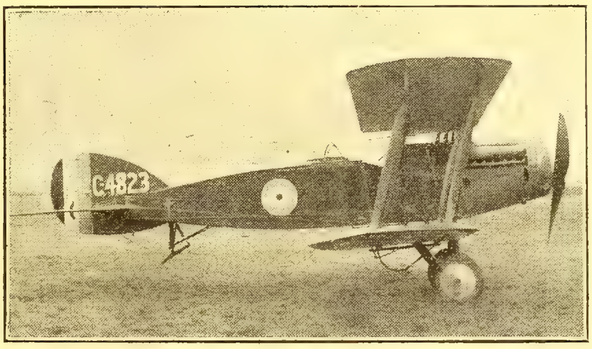

In September, 1917, a "BRISTOL" Fighter was delivered from the "BRISTOL" works and put into commission in the fighting area. It was unfortunately landed in Holland and soon afterwards was acquired by the Dutch Government. From that time until now, though in continuous use by Dutch pilots, it has never been repaired or renovated in any way, and every unit is exactly as when it left the "BRISTOL" works. Even the "Cellon" dope has never been renewed.

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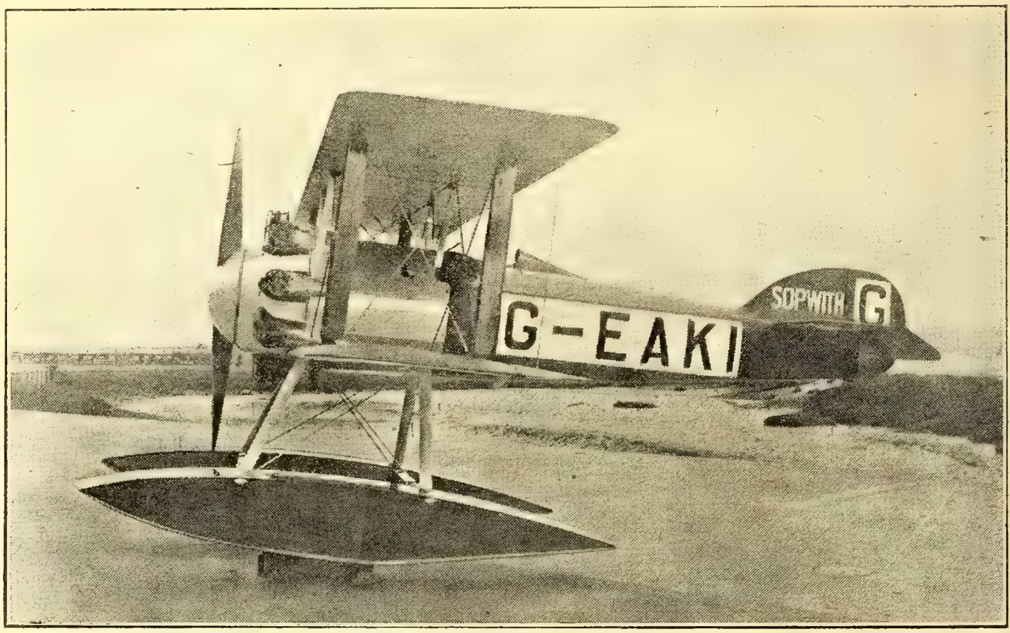

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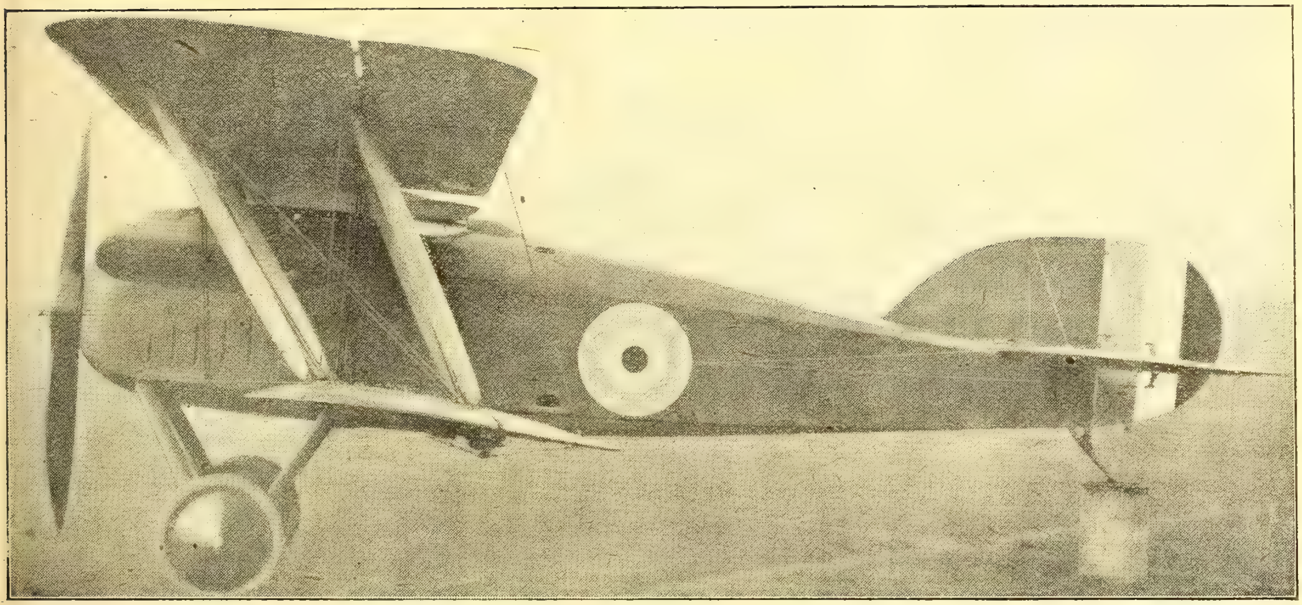
XVIII.—Vickers, Ltd.



The Vickers Type F.B. 16H. Single-seat Fighter (300 h.p. Hispano-Suiza Engine).

The Aviation Department of Vickers, Ltd., was founded in 1911 under the control of the late Major Wood (9th Lancers).

Originally, the firm acquired the sole British rights in the R.E.P. machine of M. Robert Esnault Pelterie. Starting from this basis the department under Major Wood developed the series of machines with which the name of Vickers is associated.

The Vickers "Gun-'bus," originally produced in 1913, was the only practicable fighting machine in the possession of the R.F.C. at the outbreak of war, and rendered invaluable services during the first six months of hostilities.

Since then Vickers, Ltd., have manufactured aeroplanes of many types and sizes with conspicuous success and some of their recent products are described hereafter.

THE VICKERS F.B. 16H.

The Vickers F.B. 16H. is a single-seater fighting scout. The planes are rather heavily staggered, and fitted with two pairs of struts either side of the fuselage, no centre section is fitted, the top planes being fitted direct to the inverted Vees forming a cabane in front of the pilot's seat. The top plane is well cut away over the pilot's seat to give a clear view upwards.

The tail unit consists of a large fin and unbalanced rubber and tail plane and divided elevators, the fin and tail-plane being well braced above and below with Rafwire.

The elevator controls are outside the fuselage.

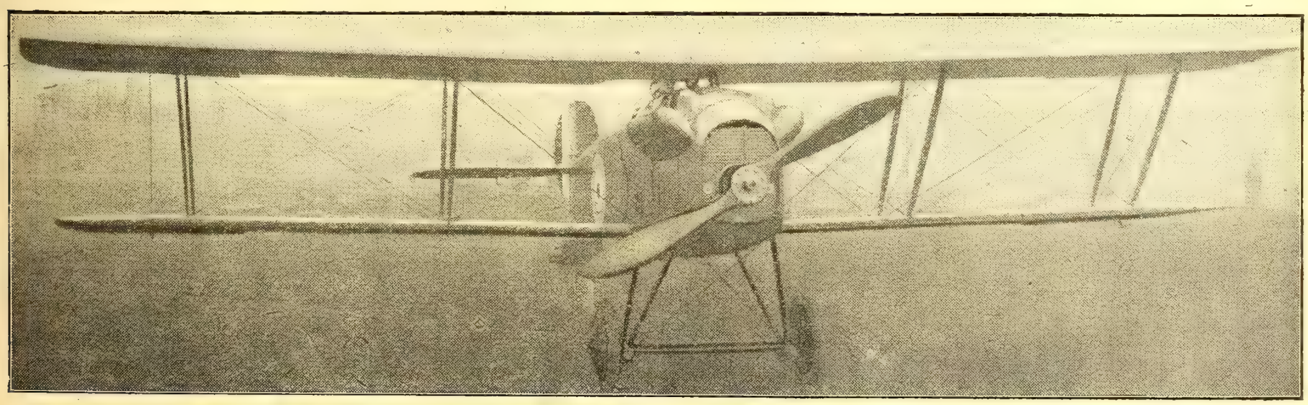
The armament consists of two fixed Vickers' guns fitted inside the cowling in front of the pilot's cockpit.

SPECIFICATION :—

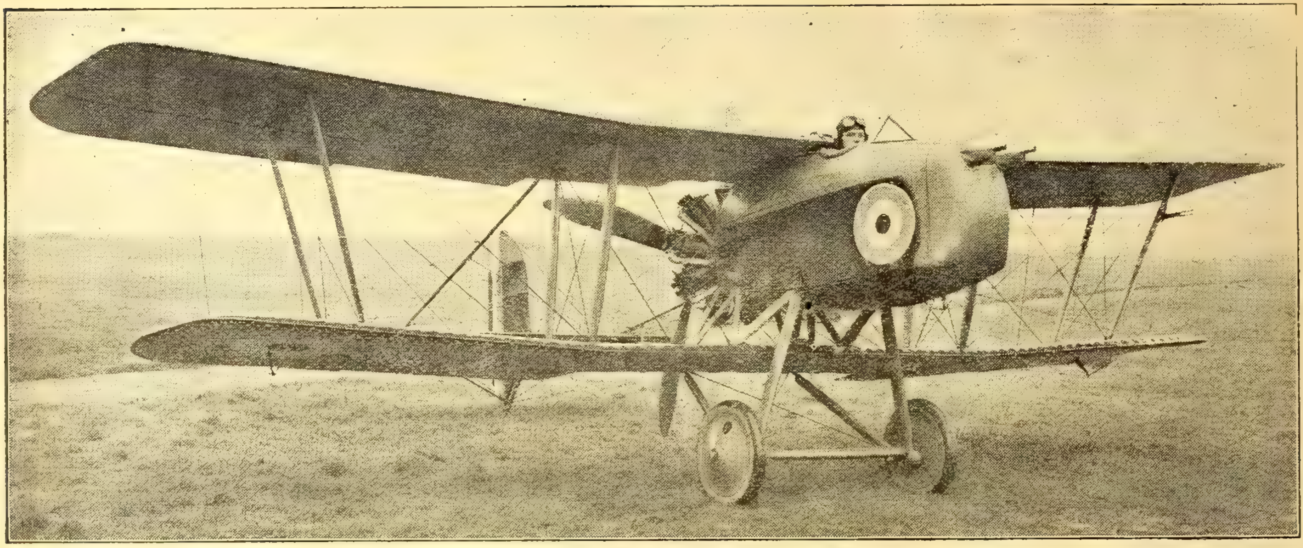
Type of machine	Tractor Biplane, single-seater.
Name or type No. of machine	F.B. 16H.
Purpose for which intended	Fighter.
Span	T. 31 ft. ; b. 30 ft.
Gap, maximum and minimum	4 ft. 5 in.
Overall length	21 ft. 8 in.
Maximum height	8 ft. 1 in.
Chord	T. 5 ft. 4 in. ; b. 4 ft. 2 in.
Total surface of wings	272 sq. ft.
Span of tail	11 ft.
Total area of tail	33.8 sq. ft.
Area of elevators	15.3 sq. ft.
Area of rudder	6.5 sq. ft.
Area of fin	7 sq. ft.
Area of each aileron and total area	2 × 9.5 + 2 × 6 = 31 sq. ft.
Maximum cross section of body	8 sq. ft.
Horizontal area of body	36 sq. ft.
Vertical area of body	57 sq. ft
Engine type and h.p.	Hispano-Suiza ; 300 h.p.
Airscrew, diam., pitch, and revs.	8 ft., 6 ft., 1,875.
Weight of machine empty	1,636 lbs.
Load per sq. ft.	8.45 lbs.
Weight per h.p. (300 h.p.)	7.65 lbs.
Tank capacity in gallons	Petrol 40 galls. ; oil 5 galls.

PERFORMANCE—

Speed low down	147 m.p.h.
Speed at 10,000 feet	140 m.p.h.
Landing speed	53 m.p.h.



Front View of the Vickers F.B. 16H. Single-seat Fighter (300 h.p. Hispano-Suiza Engine).



Three-quarter Front View of the Vickers "Vampire" Trench Fighter (200 h.p. B.R.2 Engine).

Climb—	
To 5,000 feet in minutes	3.3 minutes.
To 10,000 feet in minutes	7.8 minutes.
To 20,000 feet in minutes	23.5 minutes.
Disposable load apart from fuel (including crew)	327 lbs.
Total weight of machine loaded	2,300 lbs.

THE VICKERS "VAMPIRE."

The Vickers "Vampire" is a small single-seater pusher fighter designed primarily for trench fighting.

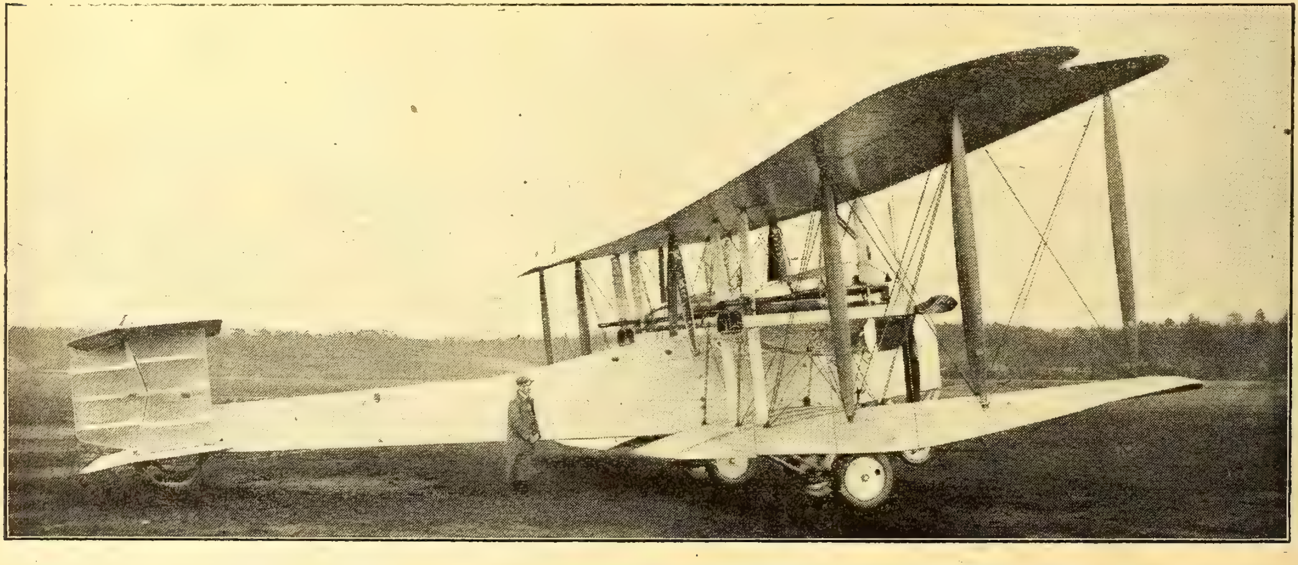
The small nacelle is directly under the under-surface of the top plane, and is connected to the lower plane by short struts. The tail booms are fitted at the ends of each of the rear inner interplane struts, and are parallel in plan view, but in elevation converge at the fixed tail-plane. The chassis is of the usual Vee type, rubber sprung.

Specification :—

Type of machine	Pusher Biplane, single-seater.
Name or type No. of machine ...	"Vampire" B. R. 2.
Purpose for which intended	Trench fighting.
Span	Top 31 ft. 6 in.; bottom 27 ft. 6 in.
Gap, maximum and minimum ...	52 in.
Overall length	22 ft. 11 in.
Maximum height	9 ft. 5 in.
Chord	Top. 5 ft. 6 in.; bottom, 4 ft. 6 in.
Total surface of wings...............	267 sq. ft.
Span of tail..............................	12 ft. 3 in.
Total area of tail	38 sq. ft.
Area of elevators	16 sq. ft.
Area of rudder	6.7 sq. ft.
Area of fin	6.4 sq. ft.
Area of each aileron and total area	(2 x 12) + (2 x 6) = 36 sq. ft.
Maximum cross section of body...	7.6 sq. ft.
Horizontal area of body	16.6 sq. ft.
Vertical area of body	24.5 sq. ft.
Engine type and h.p.	B.R. 2; 200 h.p.
Airscrew, diam., pitch, and revs.	8.75 ft., 9 ft., 1,300.
Weight of machine empty (including 500 lbs. steel armour...	1,870 lbs.
Load per sq. ft.........................	9.1 lbs.
Weight per h.p. (228 h.p.)	10.7 lbs.
Tank capacity in gallons	Petrol 29 galls.; oil 6 galls.
Performance—	
Speed low down	121 m.p.h.
Speed at 10,000 feet	115 m.p.h.
Landing speed	54 m.p.h.
Climb—	
To 5,000 feet in minutes	5 minutes.
To 10,000 feet in minutes	12 minutes.
Disposable load apart from fuel (including crew)	568 lbs.
Total weight of machine loaded...	2,438 lbs.

THE VICKERS "VIMY" TWIN-ENGINED BIPLANE.

The Vickers "Vimy" was designed as a long-distance bomber, and, following the usual practice of twin-engined machines, has a single fuselage, carrying the pilot and two gunners, one in the nose, and the other just aft of the trailing edge of the main planes.



Side View of the Vickers "Vimy" twin-engined Bomber (two Rolls-Royce "Eagle" engines 375 h.p. each), on which Capt. John Alcock, D.S.C., and Lieut. Arthur Brown flew the Atlantic.

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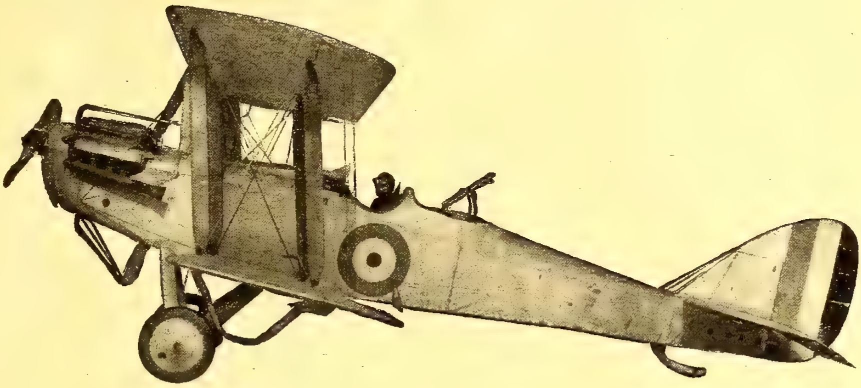

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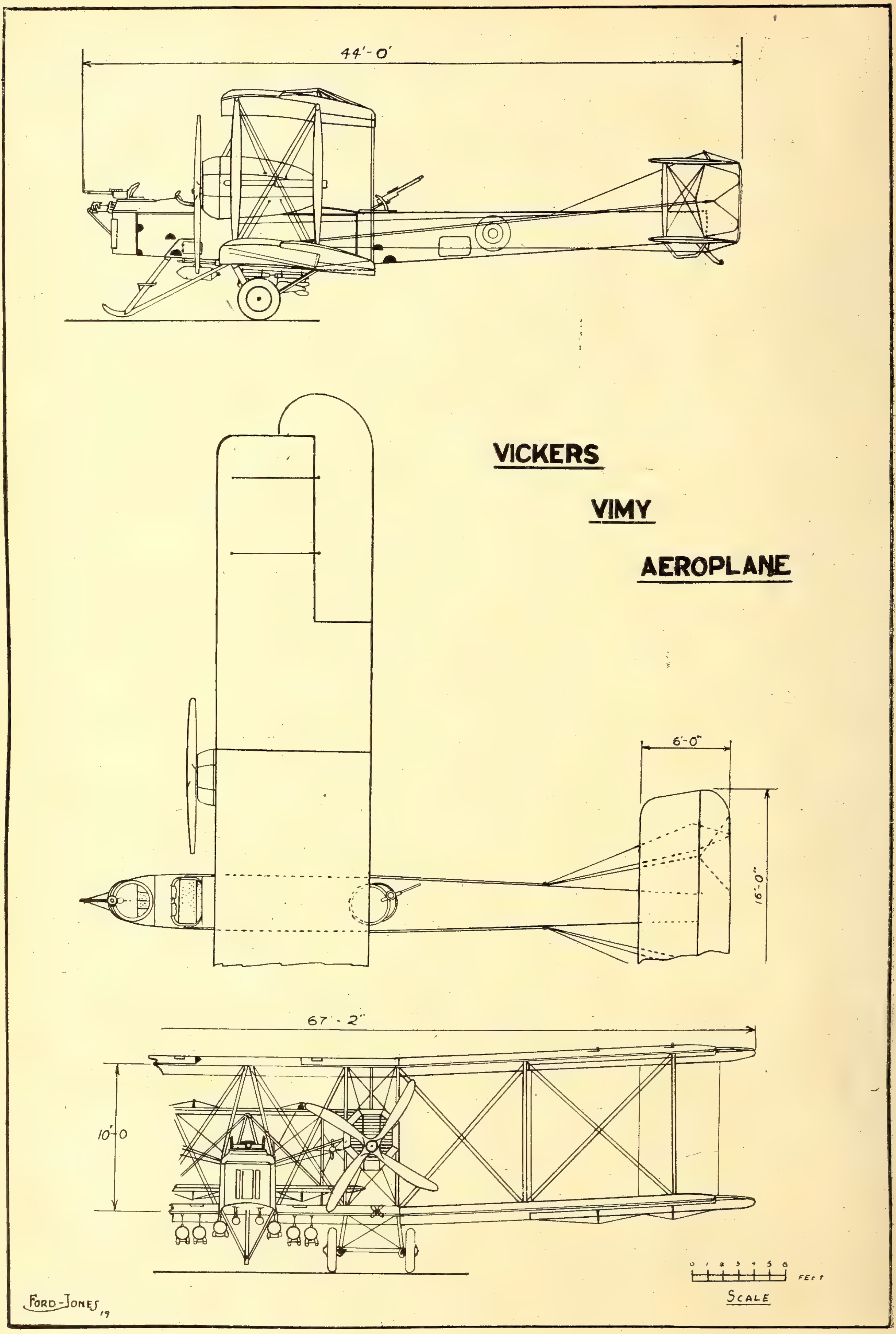
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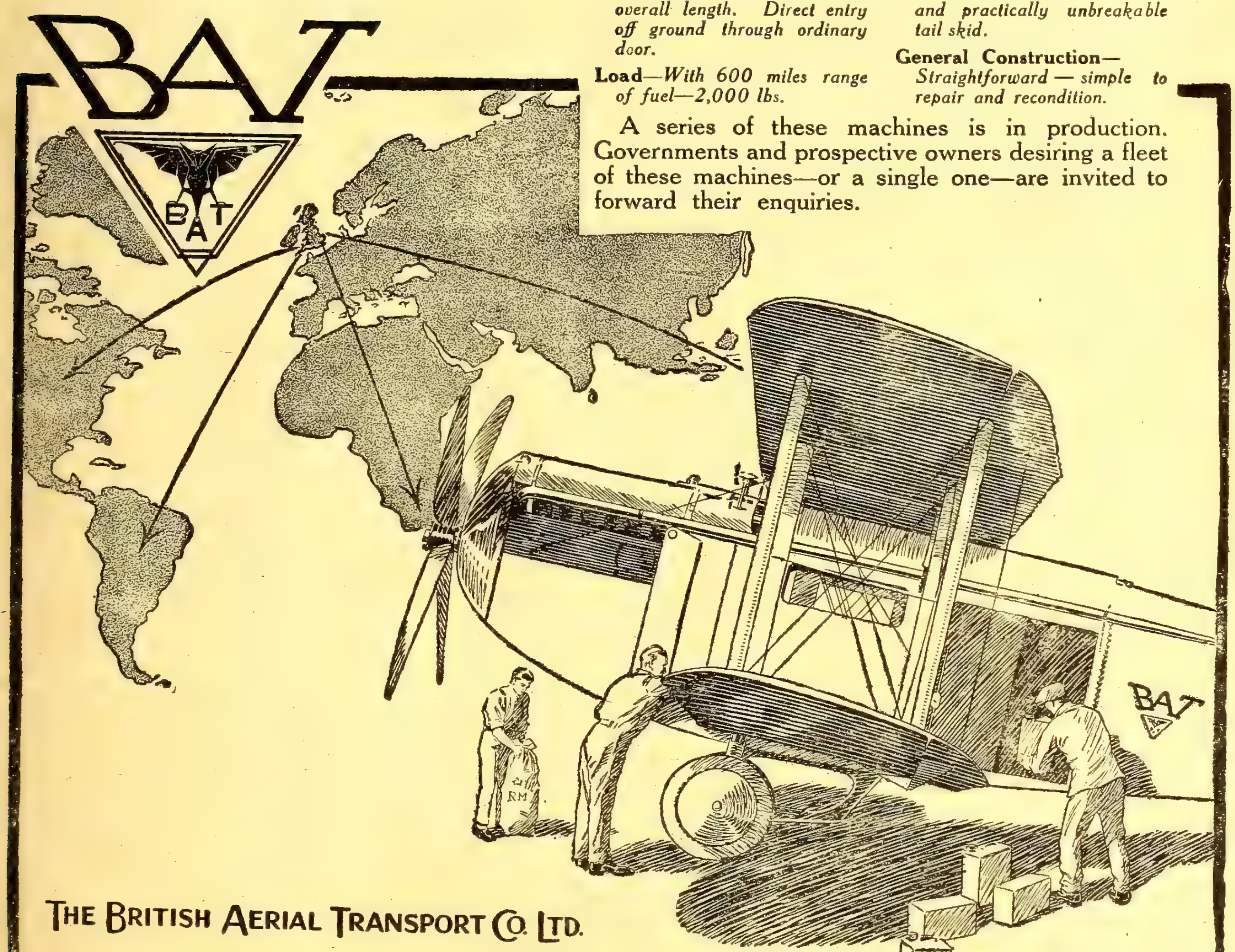

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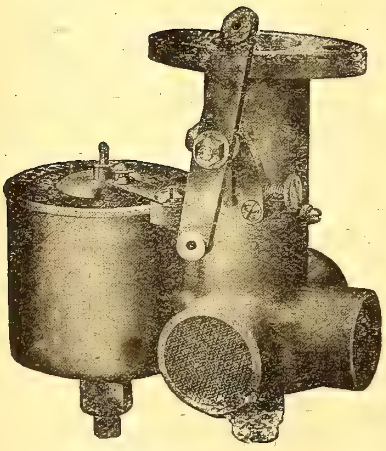

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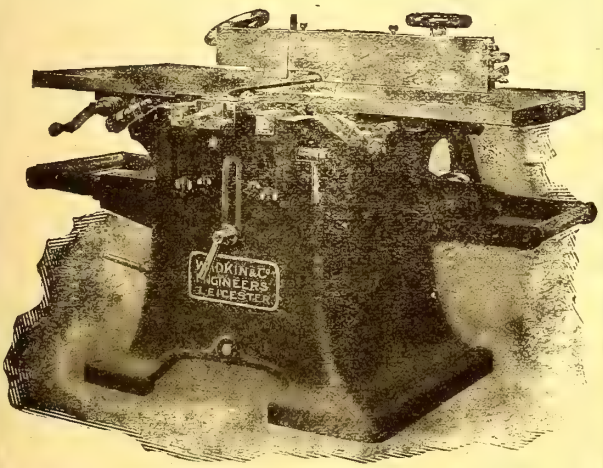

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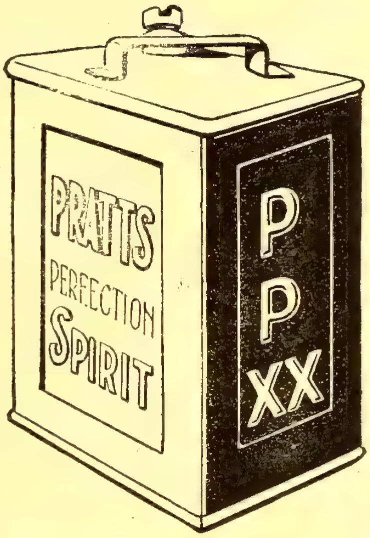

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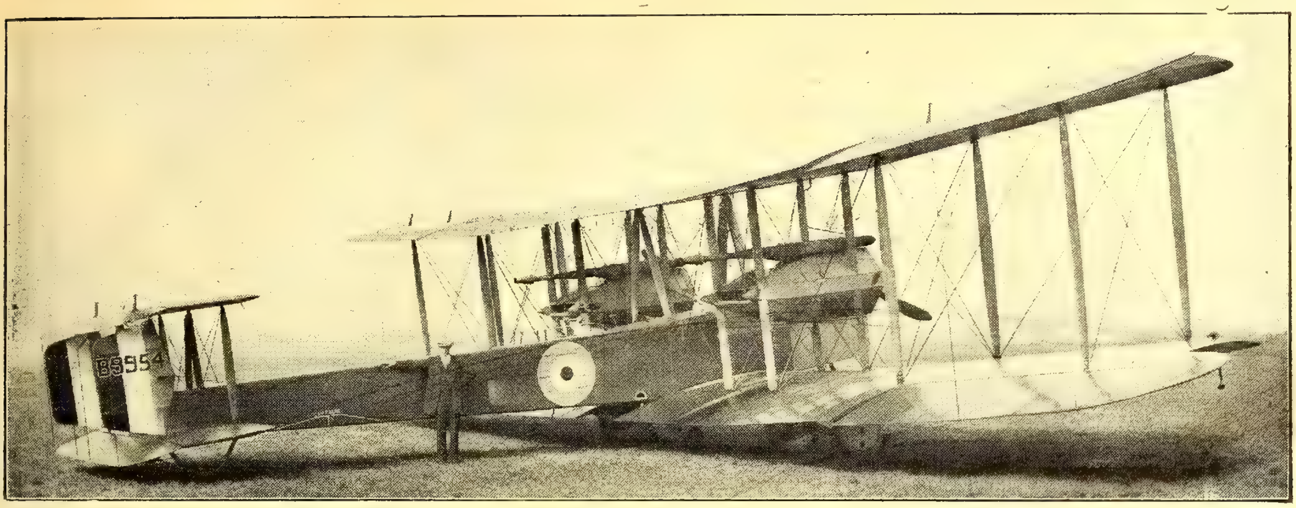


Three-quarter Side View of a Fiat-engined "Vimy" Bomber.

The engines are housed in "power-eggs," each containing one complete power unit, with its respective petrol and oil tanks, carried halfway between the planes, one on either side of the fuselage.

Under each engine unit is a separate undercarriage of two Vees of steel tube, between which an axle and two wheels are slung on shock-absorber.

To prevent the machine standing on its nose after too fast a landing a skid is fitted under the front of the fuselage.

Four large balanced ailerons are fitted to the main planes. The empennage consists of a biplane tail fitted with unbalanced elevators, and twin rudders with no fixed fin-area.

It is probably unnecessary to remind readers of THE AEROPLANE that the Vickers "Vimy" is the machine upon which Capt. Sir John Alcock and Lieut. Sir Arthur Whitten Brown made the first non-stop Atlantic flight.

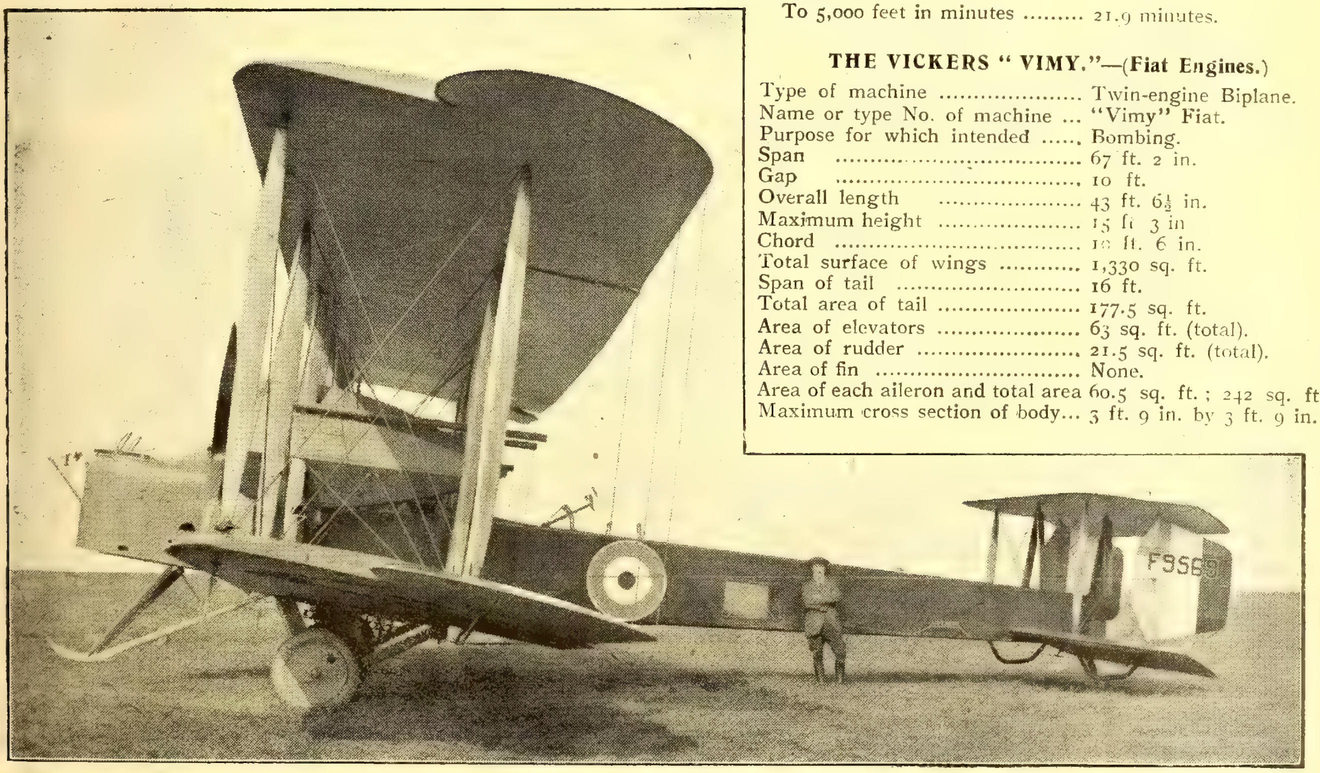
The following specification gives particulars of this machine fitted with various types of engine :—

THE VICKERS "VIMY."—(Rolls-Royce Engines.)

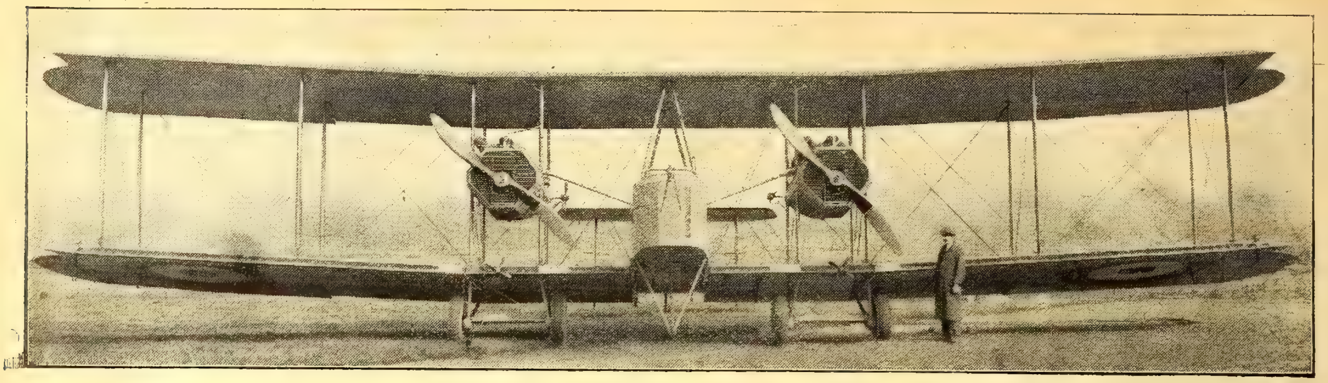
Type of machine	Twin-engine Biplane.
Name or type No. of machine	"Vimy" Rolls.
Purpose for which intended	Bombing.
Span	67 ft. 2 in.
Gap	10 ft.
Overall length	44 ft.
Maximum height	15 ft.
Chord	10 ft. 6 in.
Total surface of wings	1,330 sq. ft.
Span of tail	16 ft.
Total area of tail	177.5 sq. ft.
Area of elevators	63 sq. ft. (total).
Area of rudder	21.5 sq. ft.
Area of fin	None.
Area of each aileron and total area	60.5 sq. ft. ; 242 sq. ft.
Maximum cross section of body	3 ft. 9 in. by 3 ft. 9 in.
Horizontal area of body	125 sq. ft.
Vertical area of body	120 sq. ft.
Engine type and h.p.	Two 350 h.p. "Eagle Mark VIII" Rolls-Royce.
Airscrew, diam., pitch, and revs.	10.5 ft. dia., 9 ft. 11 in. pitch, 1,950 revs.
Weight of machine empty	7,100 lbs.
Tank capacity in gallons	Petrol 452 galls. ; oil 18 galls.
Disposable load apart from fuel	2,010 lbs. (including crew of 3)
Total weight of machine loaded	12,500 lbs.
Load per sq. ft.	9.4 lbs.
Weight per h.p.	17.8 lbs.
PERFORMANCE—	
Speed low down	103 m.p.h.
Speed at 5,000 feet	98 m.p.h.
Speed at 10,000 feet	
Landing speed	56 m.p.h.
Climb—	
To 5,000 feet in minutes	21.9 minutes.

THE VICKERS "VIMY."—(Fiat Engines.)

Type of machine	Twin-engine Biplane.
Name or type No. of machine	"Vimy" Fiat.
Purpose for which intended	Bombing.
Span	67 ft. 2 in.
Gap	10 ft.
Overall length	43 ft. 6½ in.
Maximum height	15 ft 3 in
Chord	10 ft. 6 in.
Total surface of wings	1,330 sq. ft.
Span of tail	16 ft.
Total area of tail	177.5 sq. ft.
Area of elevators	63 sq. ft. (total).
Area of rudder	21.5 sq. ft. (total).
Area of fin	None.
Area of each aileron and total area	60.5 sq. ft. ; 242 sq. ft.
Maximum cross section of body	3 ft. 9 in. by 3 ft. 9 in.



Side View of a Fiat-engined "Vimy" Bomber.



Front View of a Fiat-engined Vickers "Vimy" Bomber.

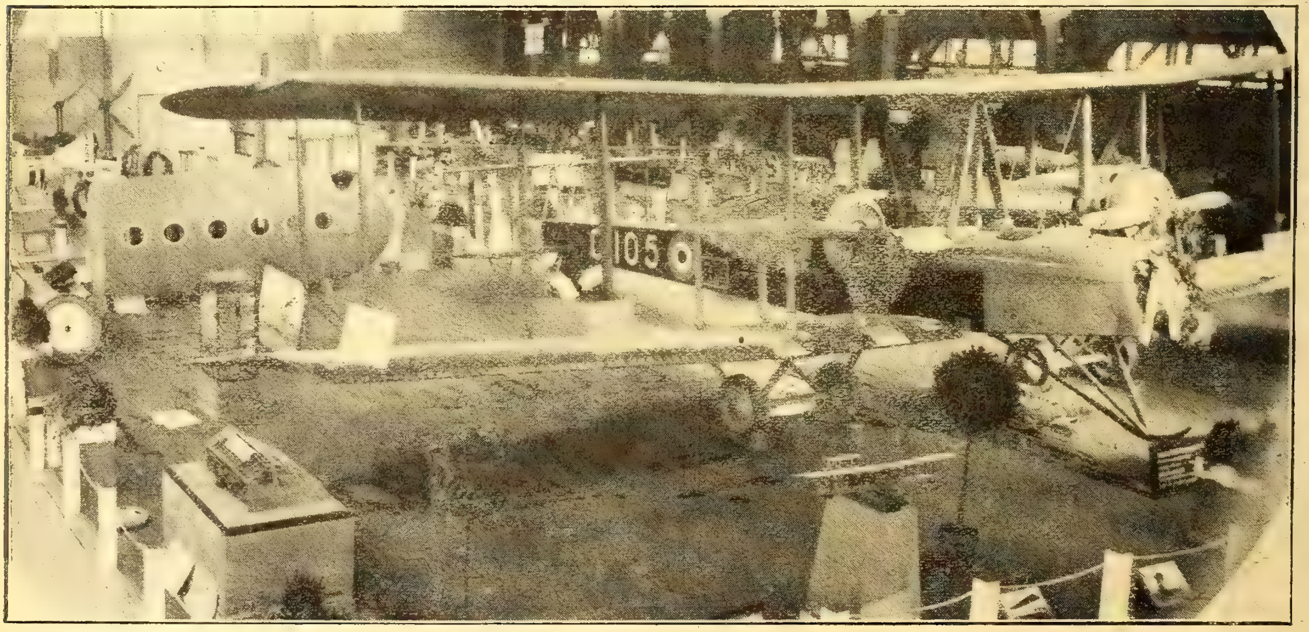
Horizontal area of body	125 sq. ft.
Vertical area of body	120 sq. ft.
Engine type and h.p.	Fiat A/12 bis.
Airscrew, diam., pitch and revs.	9.4 ft. dia., 5.85 ft. pitch, 1,700 revs.
Weight of machine empty	6,426 lbs.
Tank capacity in hours	
Tank capacity in gallons	Petrol 170 galls.; oil 17 galls.
Disposable load apart from fuel	2,479 lbs. (including crew of 3)
Total weight of machine loaded	10,300 lbs.
Load per sq. ft.	7.75 lbs.
Weight per h.p.	17.2 lbs.
PERFORMANCE—	
Speed low down	98 m.p.h.
Speed at 5,000 feet	96 m.p.h.
Speed at 20,000 feet	
Landing speed	53 m.p.h.
Climb—	
To 5,000 feet in minutes	14 minutes.
To 10,000 feet in minutes	45 minutes.

THE VICKERS "VIMY."—(Hispano-Suiza Engines.)

Type of machine	Two-engine Biplane.
Name or type No. of machine	"Vimy" Hispano.
Purpose for which intended	Bombing.
Span	67 ft. 2 in.
Gap	10 ft.
Overall length	43 ft. 6½ in.
Maximum height	15 ft. 3 in.
Chord	10 ft. 6 in.
Total surface of wings	1,330 sq. ft.
Span of tail	16 ft.
Total area of tail	177.5 sq. ft.
Area of elevators	63 sq. ft. (total).
Area of rudders	21.5 sq. ft. (total).
Area of fin	None.
Area of each aileron and total area	60.5 sq. ft.; 242 sq. ft.
Maximum cross section of body	3 ft. 9 in. by 3 ft. 9 in.
Horizontal area of body	125 sq. ft
Vertical area of body	120 sq ft
Engine type and h.p.	Two 200 h.p. Hispano-Suiza.
Airscrew, diam., pitch, and revs.	9.25 ft. dia., 5 ft. pitch, 2,100 revs.
Weight of machine empty	5,420 lbs.
Tank capacity in gallons	Petrol 91 galls.; oil 14 galls.
Disposable load apart from fuel	2,900lbs. (including crew of 3)
Total weight of machine	9,120 lbs.
Load per sq. ft.	6.85 lbs.
Weight per h.p.	22.8 lbs.
PERFORMANCE—	
Speed low down	90 m.p.h.
Speed at 5,000 feet	87 m.p.h.
Speed at 20,000 feet	
Landing speed	51 m.p.h.
Climb—	
To 5,000 feet in minutes	23.5 minutes.

Since the Armistice, the Vickers "Vimy" has been converted to a commercial mail and passenger-carrying machine by fitting it with a new fuselage designed to carry passengers and/or merchandise.

This version of the machine was described and illustrated in detail in the issue of The Aeroplane of June 11th, 1919. The trans-Atlantic "Vimy," illustrated on page 1314, piloted by Capt. Alcock, was a standard bomber fitted with big tanks in lieu of places for bombs and gun.



A View of the Vickers Stand at the E.L.T.A. Exhibition at Amsterdam. In the foreground a Vimy Bomber, and to the Left Rear the Cabin Compartment Unit of a "Vimy" Passenger-carrier.

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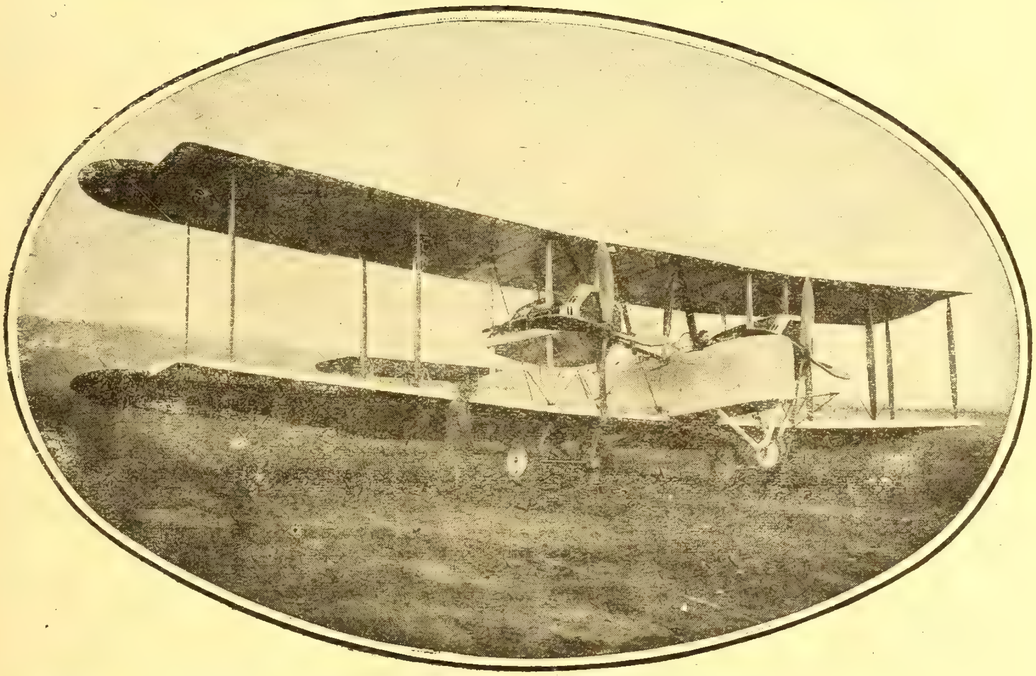
LIMITED

THE TRANSATLANTIC FLIGHT
"VICKERS - VIMY - ROLLS"



The first direct Flight from Newfoundland to Ireland (1,900 miles) was accomplished by this Aeroplane in 15 hrs 57 mins. 4 tons of Petrol and Oil were used.

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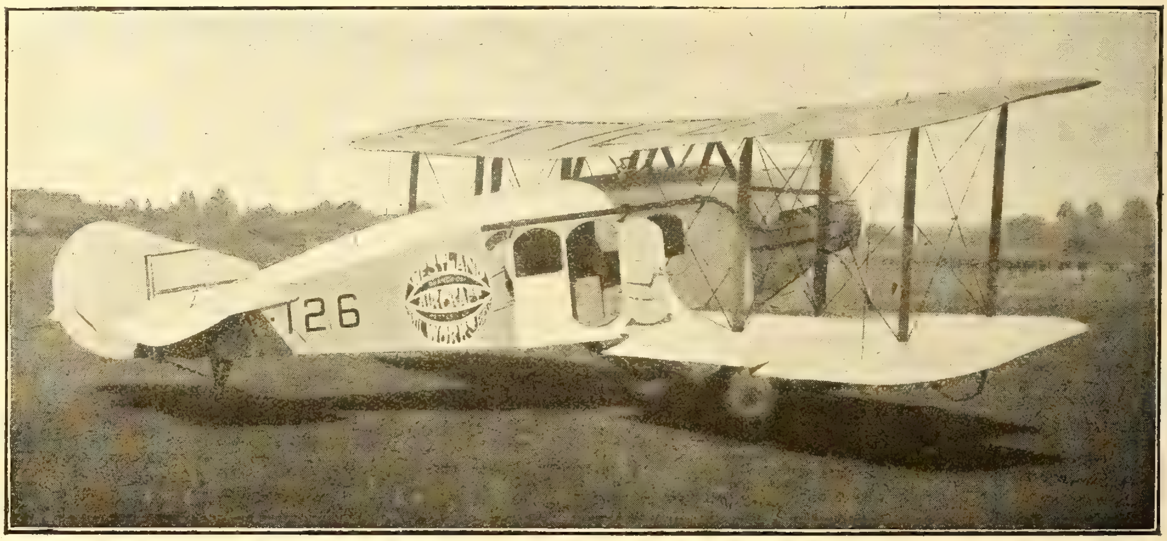
Telephone
Kensington 6520 (4 lines).

WESTLAND



The Westland "LIMOUSINE"

with the "Rolls-Royce" engine. This is not a converted war machine, but has been designed and built for high-class public passenger service or for the convenience of the private owner.

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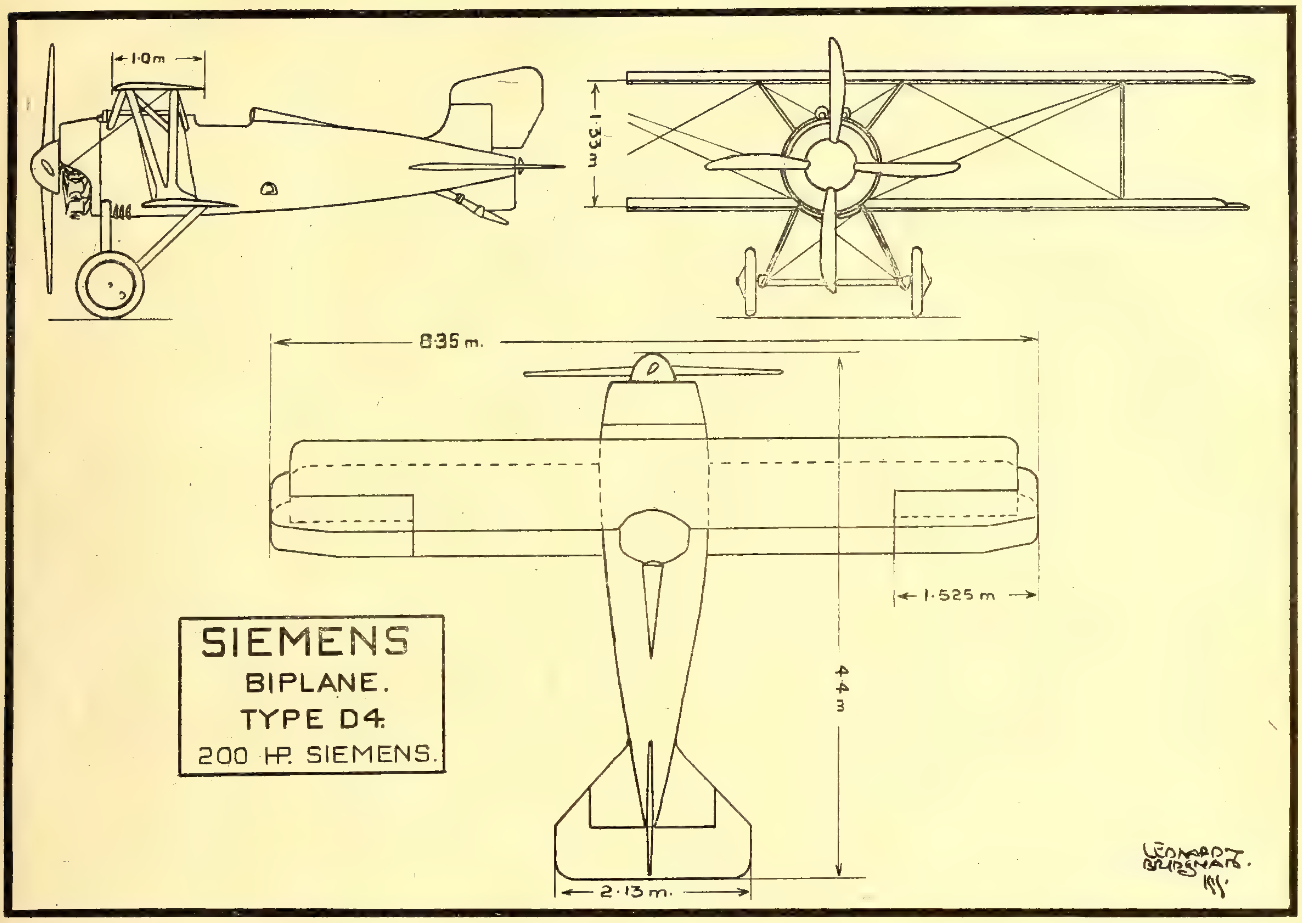
THE SIEMENS-SCHUCKERT D.IV SINGLE-SEATER.



The Siemens-Schuckert scout with a rotary motor was referred to in THE AEROPLANE of Dec. 25th, 1918. More information is now available, the particulars following having been published in a recent issue of "Flugsport."

The Siemens-Schuckert D.IV single-seater biplane was turned out for a fighting scout competition which was held in January, 1918, comparable to the French war-time avion trials. Equipped with a 11-cyl. Siemens and Halske rotary engine, the machine showed a climb in excess of the then requirements, and possessed good manœuvring qualities and sufficient speed. To improve the type the speed, especially in diving, was increased at the expense of the climbing capacity by changing the form and section of the wings. The form and detailed measures are evident from the scale drawings. The total span amounts to 8.35 metres with a chord of 1 metre; neither arrow nor V arrangement is employed.

The aircraft is equipped with a four-bladed airscrew of a diameter of 2.80 metres and a pitch of 3.90 metres, the Germans having also found this type of advantage, claiming to attain much in this case without loss of efficiency, as proved by test. The landing gear can be shortened and landings rendered much easier at high speeds (and why not mention the reduced head resistance and accordingly speed increase from the former result?—TRANSLATOR).

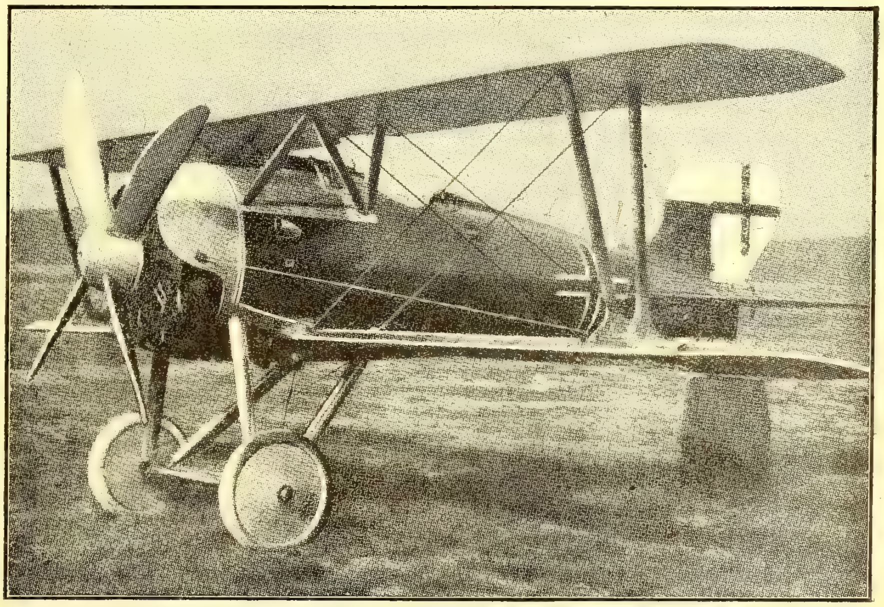
The body is made of three-ply wood, shaped to offer a minimum of head resistance. The plywood is nailed in single plies to the girder of bulkheads and four pine longitudinals, a feature being the diagonal wooden pieces going from bulkhead to bulkhead and affording the fuselage a special rigidity.

The rudder, elevator, and lower keel fin, arranged as a skid support, are mounted on the body end. The tail plane is curved symmetrically on both sides and has an angle of incidence of 0 deg. The rudder is curved on one side to neutralise the spin of the slip stream. The top fin and the fixed tail plane are attached in the usual way. The rudder and elevator are both balanced, and as the rudder is provided above the elevator the latter is made in one piece.

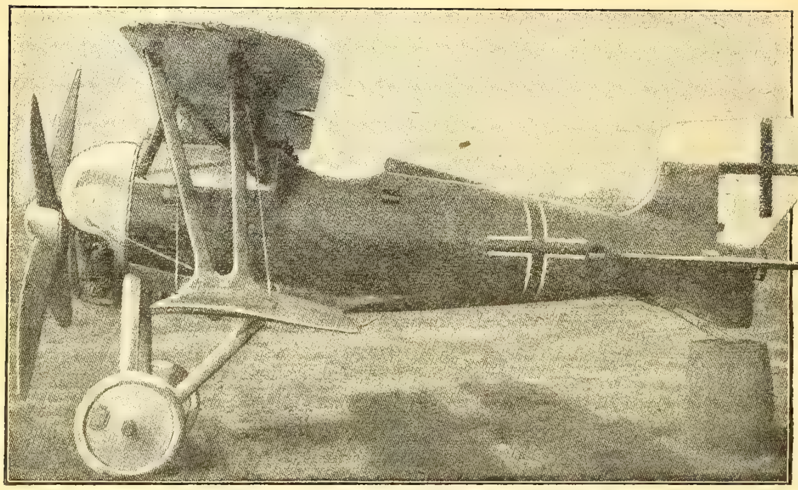
Both the rudder and elevator are made of tubes and sheet-metal ribs, and all control cables are doubled and pass over no pulleys.

The seat of the pilot rests on duralumin tubes and can be adjusted in two directions, and the safety-belt of the pilot is fixed to the longerons with intermediate spiral springs.

The pilot's cockpit is equipped with the usual instruments (tachometer, compass, altimeter, throttle and the ignition



Three-quarter Front View of the Siemens Type D.IV Single-seater Fighter.



The Rotary-engined Siemens D.IV Fighter.

levers, magneto switch, petrol stop-cock, etc.). The control lever carries at the top end the normal hand-grip adopted by the German Army authorities, and on the left side is fitted with a throttle lever. Furthermore, a special lever is provided as an emergency throttle for the engine. By means of a special locking device the controls can be maintained in any position. The control lever is carried in a fork in a longitudinal lay-shaft which carries at its front end a twin lever for the control of the ailerons, which are made entirely of steel tubes to be as little as possible vulnerable to gun-fire.

The steel tube landing gear is of the standard V type. The main axle is made of chrome-nickel steel of 55 mm. diameter and is suspended on spiral springs. The landing gear is streamlined by means of aluminium sheets with the object of reducing head resistance.

The top plane is made in one part. The spars are glued, of two parts and of square section. The hollow sections are spindled out of the solid wood which is left at the main points. The ribs are made of 15 mm. 3-ply wood with flanges, being mounted at intervals of only 160 mm. and carefully secured to the spars by means of small glued blocks. The interior bracing of the planes is carried out with tubes and wires. The fabric is sewn to the ribs. All main spar fittings clasp round the spars to avoid weakening them by drilling.

The biplane is fitted with four balanced ailerons attached to the rear spars. They are operated by tubes inside the planes, which goes to reduce the head resistance beside reducing the engagement vulnerability as already mentioned. The tail fin is made of wood in V shape, being supported upon and mounted on a strong wooden bridge inside the tail plane and fixed with two light screws. The two supporting struts of the fin are of streamline section and hollowed.

The centre section support is cable braced, and the gun-mounting is used as part of the structure. The main wiring is by means of two cables of ample dimension to give as small an elongation as possible even at high stresses. With the object of safety, a front drift cable is further provided for long, quick nose dives.

The armament consists of two fixed machine-guns mounted in the usual way for firing through the propeller.

The Siemens 11-Cylinder Rotary Engine.

The results of the 9-cyl. Siemens' rotary engine of 110-h.p. proving unsatisfactory, an 11-cyl. model of 220 h.p. was developed from the former. This differs from other rotary motors produced so far in that the crankshaft and cylinders both revolve in opposite directions. The cylinders turn in one direction at 900 r.p.m. and the crankshaft at 900 r.p.m. in the opposite one, which gives a total of 1,800 revs. per min., with only 900 for the airscrew, which has the effect of a good screw efficiency and goes to reduce the centrifugal force and its influences and thus to increase the reliability.

The high number of engine revs. increases the performance and reduces the motor weight. The advantages claimed for the low cylinder speed are the reduced air resistance of the rotating parts resulting in an improvement of the performance that the opposite rotations of the masses almost abolishes the gyroscopic effect improving the manœuvring qualities of the aircraft, that the fuel consumption is said to be considerably lower than in other rotaries, being equal to that of fixed motors, that the Siemens' rotary engine can be throttled from 900 r.p.m. to 350 revs.; further, that the cylinders can easily be dismantled; that the provision of two magnetos go to increase the reliability of the motor, and that the motor can be started by starting magneto.

The inlet and exhaust valves of the Siemens' rotary are operated by push-rods, and the engine is super-dimensioned to be suitable for high altitude flights. The normal output amounts to 200 h.p., the maximum one to 240 h.p., at a total weight of 194 kilos, which works out at a weight of 0.81 kilos per horse-power.

The motor, of 124 millimetre bore by 140 m.m. stroke, is suspended at three points in a malleable iron frame that is fixed with suitable stampings to the four longitudinals.

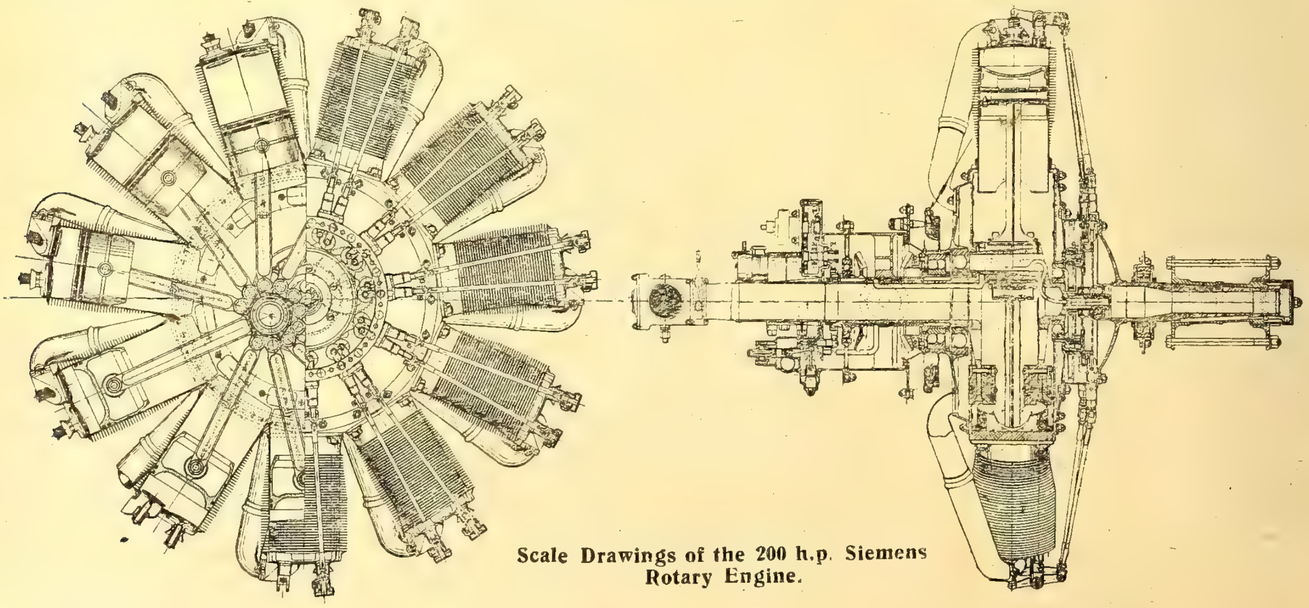
Recent models have been improved to make the quick and easy removal of the motor possible.—Hi.

A NEW FRENCH AERONAUTICAL JOURNAL.

A new French monthly, known as "L'Air," has recently made its appearance.

This journal, under the management of M. G. Roche d'Estrez, deals with aviation from both the technical and the popular point of view, and appears to have received the support of a number of the leading French technical authorities.

It is excellently illustrated and well written, and it is well worth the subscription (10 francs per annum, outside of France) to all those who wish to keep in touch with French aeronautical activities. Its address is 85, Rue St. Lazare, Paris.



Scale Drawings of the 200 h.p. Siemens Rotary Engine.

To "Aeroplane" Subscribers.

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Among the art books published in the last year or two, none can claim to be a more faithful reproduction of the artist's colour scheme and that indefinable thing, atmosphere.

FLYING COLOURS is a permanent memorial of the life of "the pilot in action,' as Major-General C. B. Ashmore calls him. It was very costly to produce, and necessarily the price to the public had to be high.

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How to meet their views? We make a special offer to any subscriber for one year to the AEROPLANE: namely to give him the right to purchase either edition at half price.

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A CONFERENCE OF DOMINION METEOROLOGISTS.

During the past week there was held in London the first Conference of Representative Meteorologists from the Dominions under the presidency of Sir Napier Shaw, Director of Meteorological Office and Acting Controller of Meteorology, Air Ministry.

At the opening meeting held on Tuesday, Sept. 23rd, the delegates were welcomed by General Sir F. H. Sykes, G.B.E., K.C.B., C.M.G., Controller-General of Civil Aviation, and Sir Napier Shaw.

Colonel L. F. Blandy, D.S.O., R.A.F., then read a paper on arrangements for transmission of meteorological information by wireless. He outlined a scheme covering the whole of Europe, Mediterranean, and North Africa. In the discussion which ensued, the delegates expressed their opinions as to how far the scheme could be adopted in the various Dominions. The afternoon discussion was directed to a discussion of transmission of observations by W/T from ships at sea. The delegates then visited the wireless station at the Air Ministry.

On Wednesday morning, Sept. 24th, 1919, Squadron Leader A. D. Spiers, R.A.F., opened a discussion on the aerial routes, Cairo-Karachi, and Cairo to the Cape. The subject was discussed from a meteorological standpoint, and the delegates concerned emphasised the interest of their respective Governments in the proposed routes. Subsequently, Sir F. Stupart (Canada) raised the question of instruments and equipment for upper air observations by means of pilot balloons. A decision was also reached on the best form of report for aviation purposes. The afternoon was devoted to the selection of stations for the general study of climatology of the globe. Later, the delegates visited Kew Observatory, Richmond.

Thursday was devoted to visits to the kite balloon testing station, Kingston Hill, and the R.A.F. Meteorological Station, Bedford.

On Friday, Sept. 26th, the Conference discussed the Convention for International Aerial Navigation. It was difficult to enter into a detailed examination of the meteorological clauses of this Convention, as these had not been seen by the Dominion meteorologists before their arrival in England. Consideration of the International codes was left over for the International Meteorological Conference which started in Paris this week. On behalf of the hydrographer of the Navy, a paper on hurricanes and hurricane conditions was circulated. A considerable amount of information on this subject was already available, and it was decided that records and the reports of all hurricanes observed in the future should be sent to the Meteorological Office, London, with a view to analysis and investigation.

On the question of further co-operation on meteorological matters of the several parts of the Empire, Colonel Bates (New Zealand) proposed "that the Conference of representative meteorologists of the British Empire assembled together for the first time should agree to continue as an association for the exchange of views from time to time upon scientific matters concerning the achievements, requirements and organisation of their services." This was carried unanimously. Sir Napier Shaw was elected the first President, and members were invited to submit rules for the guidance and acceptance of the Association.

The Conference has been beneficial in bringing together the various meteorological organisations of the Empire, and it is hoped that as a result complete co-operation will be maintained between Dominions, Crown Colonies, and the Mother Country. It is unnecessary to point out the need for this co-operation in view of the development of the great aerial routes of the Empire.

The following delegates were present :—Sir Napier Shaw (Great Britain) (Chairman), Capt. A. J. Bamford (Ceylon), Lieut.-Col. D. C. Bates (New Zealand), Mr. H. D. Grant (Admiralty), Mr. H. A. Hunt (Australia), Mr H. Knox-Shaw (Egypt), Mr. C. Stewart (South Africa), Sir F. Stupart (Canada), Dr. G. T. Walker (India), Capt. D. Brunt, of the Meteorological Office, and Capt. R. M. B. Mackenzie, R.A.F., of the Air Ministry, acted as Secretaries to the Conference.

AERONAUTICS AT THE NORTHAMPTON INSTITUTE.

It is announced that an evening course of lectures on Aeronautical Engineering is to be given at the Northampton Institute, St. John Street, Clerkenwell, during the forthcoming session by Squadron-Leader F. W. Bramwell, R.A.F.

The lectures in question are to deal with practical aeroplane design, and are intended to qualify students for positions such as that of assistant designer in an aircraft factory's drawing office.

In conjunction with the lectures there is a laboratory course in the Institute's aeronautical laboratory, which is equipped with a 4 ft. wind tunnel and other necessary appliances which will enable students to obtain a working knowledge of the experimental basis upon which the theory of aeroplane design rests.

At a similar series of lectures held during last winter it was found that a considerable number of would-be students were under the very prevalent but entirely erroneous idea that it is possible to become an aeronautical engineer without any knowledge of engineering or even of elementary mechanics and the simplest mathematics, and at the first lecture held this session, on Tuesday, Sept. 23rd, it was found that a similar misapprehension existed.

It has been pointed out in these pages on more than one occasion that aeronautical engineering is merely one specialised branch of the engineering industry as a whole, and that it is necessary to become an engineer before becoming an aeronautical engineer.

It cannot be too strongly impressed upon would-be students of aeronautical engineering that it is hopeless to attempt to acquire any useful knowledge of a specialised application of engineering—such as aeroplane design—without first acquiring a general knowledge of engineering principles, and a sufficient knowledge of mathematics to carry out the calculations involved in their application.

The attempt to do so will merely lead to the bewilderment of the student and to delay in the progress of those of his fellow-students who are reasonably qualified to benefit from the classes he is attending.

Students who wish to profit by the educational opportunities offered by such colleges as the Northampton Institute, unless they feel perfectly confident that their general engineering knowledge is sufficient to permit of their assimilating any particular course of classes, should make a point of consulting the authorities at the Institute in question. They will thus be enabled to avoid wasting their own and other people's time in attending lectures which they cannot understand.

THE USES OF CONSUTA.

Probably most people concerned with hydroplanes or with flying boats have heard of the Saunders "sewn hull" system of boat construction. When first introduced copper wire was used for sewing and was very successful, but more recently Mr. Saunders has evolved a new method of sewing with special thread which, judging by all tests, is both stronger and more reliable, lighter and more flexible, than the copper sewing. Also the new method of sewing lends itself to much more rapid production by means of machinery specially designed for the purpose.

This new sewn woodwork is known by the name of "Consuta," and it has already been used largely in the construction of flying boats. It will be remembered that in the early flying boats a considerable portion of the hull which did not come into direct contact with the sea was covered with linen fabric. Somewhat naturally it was found that linen fabric was not, after all, the best possible material for the purpose, and when Mr. Saunders began producing "Consuta" in lighter gauges these fabric sections of the hull were replaced by "Consuta," which proved entirely satisfactory.

It is now being used for the whole covering of flying boats of the largest size—in fact, of a larger size than anything which has so far been produced, and, from what one has seen, it is likely to give much more satisfactory results than any species of three-ply or other ply-wood which has yet been invented.

When in the Isle of Wight recently Mr. Saunders was kind enough to take one round his works and to show one the various uses to which "Consuta" is being put. One may not, of course, describe in detail the big boats in which it is being used, but one may say that it is also being used with great success for the skins of motor-boats.

Mr. Saunders is constructing a number of small hydroplanes of a standard type which should find a ready market. The extraordinary feature about this standard type production is that the whole boat is completed, with the exception of the installation of the power plant, before the skin is put onto the skeleton, and it strikes one at first as being quite extraordinary to see a complete new boat with all its fittings in place, but without any planking whatever.

The whole method of construction is convincing testimony to the original mind of Mr. Saunders, for there can be but very few men in any business who, with his long experience of their own particular trade, would strike out suddenly into such an entirely revolutionary method of construction.—C. G. G.

A GERMAN AIRCRAFT WORKS CLOSING

The Danish correspondent of The Aeroplane writes :—

It was resolved to close down the Rumpler Aircraft Works, at a meeting of shareholders, as the company had been unable to find profitable after-war trade.

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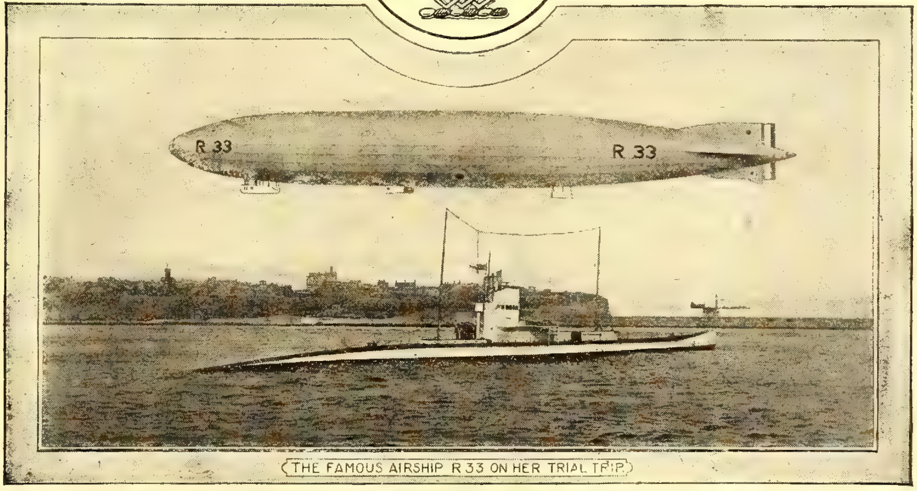

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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

THE AERIAL MAIL SERVICES.

By arrangement between the Postmaster-General and the Air Ministry aerial mail services were started between London and various provincial towns on Oct. 1st.

The first machine to leave Hounslow on that date was a Westland limousine which carried 1 lb. 1 oz. of mail to Bristol and started at 7.40 a.m., arriving at Bristol at 9.10 a.m.

An Avro, carrying 2 lb. 11 oz., left at 7.45 a.m. for Birmingham and arrived at 9.15 a.m.

A Blackburn "Kangaroo," owned by the Grahame-White Co., carrying 3 lb. 8 oz., left at 7.50 a.m. for Newcastle and arrived at 11.20 a.m.

A Blackburn "Kangaroo" belonging to the Northern Aviation Company, carrying 13 lb. 10 oz., left at 8 a.m. for Glasgow and arrived at Renfrew aerodrome at 1 p.m.

A B.A.T. commercial aeroplane, carrying 6 lb. 2 oz., left at 8.15 a.m. for Didsbury, Manchester, and arrived at 10.45 a.m.

In all, 315 letters were carried. There was accommodation for 4,750 lb. of mail.

The machines which carried the mails to the three northernmost cities, Glasgow, Newcastle, and Manchester, were scheduled to return on the day following their arrivals there. Those flying to Birmingham and Bristol were to return on the same day. The machines left at dawn. The mails were conveyed to the aerodrome on the previous night by G.P.O. vans.

Directions for the posting of the mail were stated in last week's issue of THE AEROPLANE. The mails were dispatched from the Post Offices in sealed boxes and a receipt was given for each at the aerodrome.

According to the "Daily Telegraph" of Oct. 2nd, fifty-four R.A.F. aeroplanes were employed on Oct. 1st to distribute the mails over the country.

Copies of the "Times" newspaper were delivered by aeroplane to personages of importance in the United Kingdom and abroad during the strike up to Oct. 2nd.

On Oct. 2nd 320 "letter packets" were carried by the aerial mail services. The inward mail to London from the five abovementioned cities was rather less than the outward mail. The principal contributor was Newcastle, from which centre 115 letters were sent to London.

It was estimated that the revenue from the service did not amount to one-tenth of its cost, and it was said that the service would be discontinued within this country after the normal train service had been resumed.

The first aeroplane for London carrying the Glasgow mail left Renfrew aerodrome in the morning of Oct. 2nd with a heavy bag of mails. The machine arrived in London before midday. The aeroplane which left Hounslow for Glasgow had to descend at Hendon owing to fog. A landing had to be made at Doncaster for petrol and a further stop was made at Newcastle. Owing to rain and fog, the machine stayed the night at Turnhouse aerodrome, near Edinburgh.

An R.A.F. machine, piloted by Lieut. Shepherd, with Lieut. Page, left Kenley for Newcastle at 5.37 a.m. on Oct. 2nd. The machine ran out of petrol when nearing Newcastle at 8.45 a.m. The pilot tried to make a landing in a football field, but a wing struck a building and the machine came down in a street. As a result of the accident Lieut. Shepherd had his skull fractured and broke an arm. He died later from his injuries. Lieut. Page was uninjured and delivered the mails.

An R.A.F. Bristol biplane, No. 4,577, carrying mails from Salisbury to Pembroke, made a bad landing at Llanelly on Oct. 6th. The machine was damaged, but the two aviators escaped without injury. Thousands of people visited the scene of the accident during the day.

It is stated that fifty R.A.F. aeroplanes were employed to carry the mails on Oct. 3rd. The mails were again carried to Bristol, Birmingham, Manchester, Newcastle and Glasgow by civil aviation machines. An Airco machine carried the French post to Paris and a Handley Page went to Brussels, taking the mail for Belgium, Norway, Sweden, and Denmark.

An official statement from Downing Street issued on Oct. 3rd stated that owing to the improvement in the train services it had been decided to discontinue the civil aerial mail services in Great Britain.

THE IRISH MAILS.

The Under Secretary for Ireland denied on Sept. 30th the report that an air service between England and Ireland was about to be established. A prominent official of the Post Office informed a Press representative on Oct. 1st that it was quite probable that an Irish service would be instituted, although the Department had not arrived at a decision.

According to the "Morning Post" of Oct. 1st, an air service for the conveyance of Government dispatches had been organised between Holyhead and London. It was to work in connection with the Kingstown and Holyhead mail service.

A G.P.O. official stated on Oct. 2nd that there would not be an Irish aerial mail, as official communication had been established by means of train to Bangor, motor van to Holyhead, and by boat in the usual way.

THE AIR POST STOPPED.

The Secretary of the General Post Office announced on Oct. 6th that in the altered circumstances the conveyance of mails by aeroplane between London and Bristol, Birmingham, Manchester, Newcastle, and Glasgow, had been discontinued.

ANTI-STRIKE AVIATION.

A. V. ROE AND CO., LTD.

During the week the Avros were busy helping the State and the public to tide over the strike. But booking ahead was a difficult matter, and, at one time, the Government left them to their own devices; then put on petrol restrictions; then employed some machines for the air mail; and, finally, opened all civil flying again. However, four Avros carried the "Daily Chronicle" to Cardiff, Bristol, Birmingham and Norwich for several days in succession. Matrices of the "Daily News" were taken to Manchester on two occasions. Copies of the "Daily Sketch" were taken to Weston-super-Mare, and of the "Daily Chronicle" to Cleethorpes, near Hull, and to Swansea.

To the Avros was entrusted the task of carrying the mails to Castle Bromwich for so long as the Government kept the air mail going.

IN STRIKE TIME.—Aeroplanes assembled at a London Aerodrome. These machines carried supplies of newspapers to Manchester, Plymouth, Sheffield, and Weston-super-Mare.

Several journeys were made to Manchester, one in very tragic circumstances, for two ladies had to attend a funeral there and could not have arrived in time by any other means.

Other cross-country journeys were to Rugby, Eastbourne, Gloucester, Stroud, Oxford and Saffron Waldon.

THE BRITISH AERIAL TRANSPORT CO., LTD.

The B.A.T. Co.'s emergency aeroplane service from London to Birmingham was flown on Sept. 30th for the last time. A machine left Hendon at 10.45 a.m. piloted by Mr. Cyril Turner. Castle Bromwich Aerodrome, Birmingham, was reached just before noon. The return journey was started at 1.5 p.m. and the machine reached Hendon at 2.10 p.m.

The machine started on its second flight at 3 p.m., piloted by Major C. Draper. Birmingham was reached at 3.45 p.m., and the machine left there again at 4.15 p.m. and arrived at Hendon at 5.20 p.m. The company announced on Sept. 30th that owing to the Government requiring their commercial aeroplanes for mail service, the service to Birmingham has been discontinued, and will not run until further notice.

THE NIEUPORT AND GENERAL AIRCRAFT CO.

Two Nieuport two-seater "Nighthawk" biplanes were on the Hendon aerodrome on Oct. 1st. They were ready to carry the mail to Dublin and Edinburgh. The machines and their pilots were held in readiness for Government service.

THE SUPERMARINE AVIATION WORKS, LTD.

On Saturday, Sept. 27th, despite the strike, thousands of copies of the "Southern Daily Echo" were delivered to Bournemouth. The proprietors of the newspaper arranged with the Supermarine Co. that one of their flying-boats should carry the copies. The service was carried out quickly and smoothly and showed the possibilities of the flying-boat for commercial use.

The flying-boat received the cargo of news at 6 p.m. and, piloted by Cmdr. Hobbs, D.S.O., D.S.C., the machine set out for Bournemouth. The weather was fine, and at about 6.43 p.m. the machine flew into the bay and alighted east of Bournemouth Pier. The papers were taken to the shore in several rowing boats.

The flying-boat service from Woolston (Southampton) to Le Havre was started on Sunday, Sept. 28th. Shortly after 5 p.m. two machines left for France, each carrying a couple of passengers, with luggage. The boats became separated in a storm, but both reached their destination safely. On the return journey one flew straight back to Woolston and the second landed at Bembridge, Isle of Wight, to fill up with petrol. It reached the sheds a little later.

On Monday, Sept. 29th, two flying-boats left for Le Havre at noon, and in addition to carrying passengers they bore mails. Amongst the contents of the mail-bag were several interesting letters, including a message of greeting from the Mayor of Southampton to the Mayor of Le Havre, another from the President of the Southampton Chamber of Commerce, a third from the French Consul, and a greeting from the editor-in-chief and general manager of the "Southern Daily Echo" and its allied journals to the editor of the "Journal du Havre."

The letter which the Mayor of Southampton sent to his Worship of Le Havre was as follows :—

> My dear Sir, — I wish on behalf of the people of Southampton to extend to you and the inhabitants of Le Havre our most cordial greetings upon the inauguration of this, the first, public aerial service between any English port and French port. The boat service between Le Havre and Southampton has been established for a long period, and has had, and I hope will continue to have, a remarkably successful existence, and this strong link between our two towns is further increased by this establishment of the flying-boat service due to the enterprise of a Southampton firm, the Supermarine Aviation Company, by whose courtesy I am sending this letter through the agency of one of the initial flying-boats.
>
> It may be, Mr. Mayor, that time will prove that this aerial service between our respective ports will become a necessity, and grow into one of very great importance.
>
> With all good wishes,
>
> Yours very sincerely,
>
> (Signed) S. G. KIMBER, Mayor.

According to the "Daily Telegraph," of Oct. 1st, one of the machines which flew to Le Havre on Sept. 20th returned to Newhaven in the evening with a passenger. As it was too late to fly home the pilot stayed the night there and came back the next day.

On Sept. 30th another flying-boat was sent to Le Havre with two passengers and their luggage.

VICKERS, LTD.

An aeroplane mail service was opened on Oct. 1 by Vickers, Ltd., between their head offices in London and the Naval Construction works at Barrow. An aeroplane piloted by Lieut. Simpson (late R.A.F.) arrived at Walney airship station in the morning with letters from London and Sheffield. After lunch the pilot flew back to London. The service is to be flown daily. Vickers, Ltd., are willing to take urgent messages from Barrow people to London by the service.

A small airship, in the service of the Royal Navy, stationed at Barrow, has been lent to Vickers, Ltd., in connection with their aerial mail service between Barrow and London. Mails have been carried by this ship to Sheffield and thence by aeroplane to London. Vickers, Ltd., have also carried urgent letters from London to Barrow for local people.

OTHER NEWS

A number of ex-Royal Air Force wireless operators have volunteered at the Air Ministry for service. These are being placed as quickly as possible.

On the special official service arranged for Paris, two machines left carrying five passengers and 150 lb. of mail on Sept. 30th.

Over one ton of newspapers was delivered by air on Sept. 30th. The papers were flown from London at dawn to Bristol, Birmingham, Cardiff, Norwich, etc.

The Right Hon. H. A. L. Fisher, Minister of Education, flew from Sheffield to London on Sept. 30th to attend a meeting of the Cabinet.

Arrangements were made to transport the artists in touring theatre companies last week-end by aeroplane.

THE CONTINENTAL SERVICES.

A LONDON-HOLLAND AIR SERVICE.

The British Aerial Transport Co., Ltd., arranged to start a service to Holland on Oct. 7th. The machine, a B.A.T. FK26 commercial biplane, was due to leave Hendon at 11 a.m. for Hounslow, where the Customs formalities are observed.

The aeroplane was scheduled to leave Hounslow at 11.30 a.m. with a cargo of Emaillite Dope. The journey to Soesterberg aerodrome, near Amsterdam, is expected to take three hours.

The return journey will be made every Wednesday, and the machine will leave Amsterdam at 11.30 a.m. This week four passengers have booked seats from Holland. There is a waiting list for the service at both ends of the route.

As soon as the demand merits it, the service will be run more frequently. The FK26 can carry four passengers or 1,000 lb. of goods and has a cubic capacity of 140 cubic ft. Passages may be booked at the offices of the company at 38, Conduit Street, W.1, from which address a car will leave for the aerodrome every Tuesday at 10.15 a.m.

THE STRIKE SERVICE.—The Airco D.H.10 machine which Capt. Gathergood flew to Newcastle in 2hr. 10 min. on Sept. 30th, loading up previous to the start.

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Extract from Chapter I.

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"Hearken unto the revelations of Roy, and profit thou by his experiences."—"*The Revelations of Roy,*" *XXI. 2.*

Extract from Chap. II.

1. And when he was come unto Farn, Roy was compassed about by a great multitude.

2. And he beheld winged chariots of divers designs; thus there were the Scout, and the Dolphin, and the Martinsyde, and the Camel, even that which produceth the hump.

Extract from Chap. XXI (and last).

17. And in all thy ways consider this, that there be two things greater than any other in forming the character of him that flies; and the one is Energy and the other, it is Enthusiasm.

19. And take thou a pride in being an aviator; for hath not the great Hender said, These young men are the salt of the Earth.

20. Go thy way in courage and good cheer; and greet the Great Adventure with a song.

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The Handley Page Continental Services.

On Sept. 29th, 30th, Oct. 1st and 2nd Handley Page Transport, Ltd., on their London-Paris and Brussels Air Services carried eighty-six passengers, two tons of freight, and three and a half tons of mails, which is roughly 250,000 letters.

There is great difficulty in getting the machines from Brussels and Paris off to time. Besides the Customs formalities, the excitable Belgian and French people will fight for the front seats. In addition, they will not enter the machines until they have made exhaustive inquiries as to the position of the lavatories and the saloon bar, which they firmly believe is carried on every Handley Page.

Owing to a printer's error, the single fare in a Handley Page machine to Paris or Brussels was quoted at twenty guineas. The fare is, in fact, fifteen guineas.

In the table of the London-Paris and Brussels air services last week it was stated that a Handley Page machine, on Sept. 24th, left Hounslow at 10.30 a.m. and arrived at Brussels at 3 p.m. Owing to the amount of additional flying then being done by the Handley Page Transport, Ltd., on account of the strike, they were unable to check the times of their machines with those which The Aeroplane had received from other sources. They have now stated that that machine left Cricklewood at 10.30 a.m. for Hounslow. The journey to Brussels was started from Hounslow a few minutes after noon.

The Airco London-Paris Air Service.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Sept. 29th	D.H. 4a	Capt. Baylis	1.23 p.m.	3.30 p.m.			2
	D.H. 16	Lt. McMullin	1.25 p.m.	3.30 p.m.			Mail
	D.H. 4a	Lt. Powell	2.20 p.m.	4.35 p.m.			2
	D.H. 16	Capt. Carleton			11.30 a.m.	2.22 p.m.	2
Sept. 30th	D.H. 16	Lt. Chattaway	12.45 p.m.	3.0 p.m.			2
	D.H. 4a	Capt. Baylis			11.30 a.m.	1.40 p.m.	0
	D.H. 4a	Lt. Shaw			11.45 a.m.	2.6 p.m.	2
Oct. 1st	D.H. 4a	Capt. Courtney	12.45 p.m.	3.25 p.m.			2
	D.H. 16	Lt. McMullin			11.45 a.m.	1.40 p.m.	0
Oct. 2nd	D.H. 9	Lt. Shaw	1.0 p.m.	3.25 p.m.			2
	D.H. 16	Lt. Powell			11.30 a.m.	2.40 p.m.	4
	D.H. 16	Lt. Chattaway			11.30 a.m.	2.41 p.m.	4
Oct. 3rd	D.H. 4a	Capt. Baylis	12.53 p.m.	3.10 p.m.			1
	D.H. 4a	Capt. Courtney			11.30 p.m.	2.0 p.m.	2
Oct. 4th	D.H. 16	Lt. McMullin	12.50 p.m.	3.20 p.m.			4
	D.H. 9	Lt. Shaw			11.30 a.m.	2.20 p.m.	2
	D.H. 4a	Capt. Baylis			11.30 a.m.	1.55 p.m.	2

With reference to the above table of flights, on Sept. 30th the D.H.4a, piloted by Lt. Shaw, which left Paris at 11.45 a.m., carried Maj.-Gen. Sir F. Sykes, K.C.B., C.M.G., and his secretary as passengers.

Express parcels were taken in every machine except in that on Sept. 29th, which carried the Government mails. On Oct. 1st the "goods" carried to Paris included a pedigree blue Persian kitten which was consigned to a lady in Geneva.

On Saturday, Oct. 4th, the Airco London-Paris Service completed its sixth week of continuous operation.

Although the weather was unfavourable on twenty-eight days, eighty-three flights have been accomplished out of eighty-six scheduled. As a proof of the reliability of aeroplanes nowadays, during the 20,750 miles of flying, only once has a pilot been forced to alight through mechanical trouble.

Mr. Holt Thomas said recently, "This service is the first link in a European chain of 100 miles an hour aerial ways. Before long we shall be able to save not merely hours, but days, in the transport of letters from London to some of the great Continental cities."

London.

Hendon.—Sir James Purves Stewart, a Harley Street specialist, recently flew from Hendon to Leicester in a Grahame-White aeroplane, to perform an operation. It is understood that his nerve was unaffected.

Hounslow.—On Sept. 30th Capt. Gathergood (late R.A.F.), piloting an Airco D.H.10, flew to Newcastle with a load of newspapers. Newcastle was reached in 2 hours 10 min. The return journey took 2 hours 50 min.

On October 2nd Capt. Gathergood, piloting an Airco D.H.10, left Hounslow at 1.15 p.m. for Renfrew on Government mail service. He arrived at Renfrew at 6 p.m.

On Oct. 3rd Capt. Square (late R.A.F.), piloting an Airco D.H.9, left for Paris *en route* for Madrid at 12.15 p.m. and arrived at Paris at 2.45 p.m.

On Oct. 4th Maj. Stuart Wortley, piloting an Airco D.H.4a, arrived at Hounslow at 4.35 p.m., having left Interlaken, Switzerland, at 11.15 a.m.

Hamble.

About 30 little brothers and sisters of the famous Avro "Baby" are soon to make their appearance in the world. Flying men do not need to be reminded of the original "Baby's" triumph in the Sealed Handicap of the Aerial Derby, of other wins at Hendon, and of the sensation it created at Amsterdam. But 25 miles on the gallon of petrol at 70 m.p.h. are figures to give food for thought to business men who have mastered the art of flying, especially in view of the recent transport upheaval. It would be interesting to have a peep at Sir Philip Sassoon's diary during the past 10 days.

Southampton.

An Avro seaplane, carrying newspapers from Southampton to Guernsey, was wrecked in a fog behind a breakwater off Alderney on Oct. 5th. The pilot, Capt. Evans, was rescued.

Warrington.

The Golden Eagle Aviation Co., Ltd., sent two D.H.6 machines from St. Annes-on-Sea for the Warrington Flying Week. Mr. H. W. Griffin, the hon. secretary of the Infirmary Fund, arranged the Flying Week, which started on Sept. 25th.

For one guinea the passengers were taken for quite lengthy flights, and the aviation company only received one half of each guinea. The other ten and sixpence went to the Infirmary £10,000 Fund, and Mr. Griffin fully expected that it would be wiped off before the end of the week.

The first passenger to be taken up was Alderman Bennett. Lady Grenall also had a flight. Tickets for free flights were offered to all residents of over seventy years of age, and at least two took advantage of the offer. The flying took place from a newly licensed field in Chester New Road.

A charge of twopence was made for admission to the ground, and a body of stalwart men in blue kept the crowd back. Refreshments were served in two marquees.

The managing director of the Golden Eagle Aviation Co., Ltd., is Major H. S. Shield, who flew over to Warrington from St. Annes-on-Sea. Capt. Hedges, also of the company, took many passengers up during the flying week.

INDIA.

The Government of India has sent a circular to the Chambers of Commerce proposing that there should be seven maintenance centres for aeroplanes within the Government's jurisdiction. They are Bombay, Calcutta, Madras, Karachi, Delhi, Nagpur and Rangoon. It is believed that these centres will be sufficient for all probable air routes in India and Burma. They will also enable every advantage to be taken of the speed and range of air transport.

The Government also state that after taking the best technical advice, they believe that civil aviation will best be encouraged by the grant of an air mail-carrying monopoly to one company for a term of years. Other companies would be able to enter into competition for other transport than that of mails.

The policy at present outlined is for inland aviation only. The Government is waiting to see the result of long-distance flights before proposing anything for the carriage of mails between India and Europe.

CHINA.

Lieut. E. C. Ricou, a pilot in the French Army Air Service, visited the Aero Club of America on Sept. 14th. He has been chief of the French Air Forces operating in China. In addition to being an aviator he is an engineer, and has been prominent in starting large electric and water companies.

He is financing his aviation enterprise himself. Lieut. Ricou intends to start a commercial aerial route between Shanghai, Hong Kong, Haifung, Canton, Tonkin and Maçao. Passengers and light freight will be carried.

During the war Lieut. Ricou saw extensive service in the French campaign in Salonica and was shot down and wounded three times. After he had been ordered to China he was responsible for the crushing of a local rebellion which had been actuated by German influence.

FRANCE.

The Salon de l'Aeronautique.

Among the British firms who will exhibit at the Salon de l'Aeronautique, which opens on Dec. 19th next, are the Aircraft Travel and Transport, Ltd.; Westland Aircraft Works, Ltd.; Boulton and Paul, Ltd.; Vickers, Ltd., and Handley Page, Ltd.

The Italian aeroplanes and seaplanes to be shown are the Ansaldo, Fiat, Macchi, Alta Italia, and Caproni.

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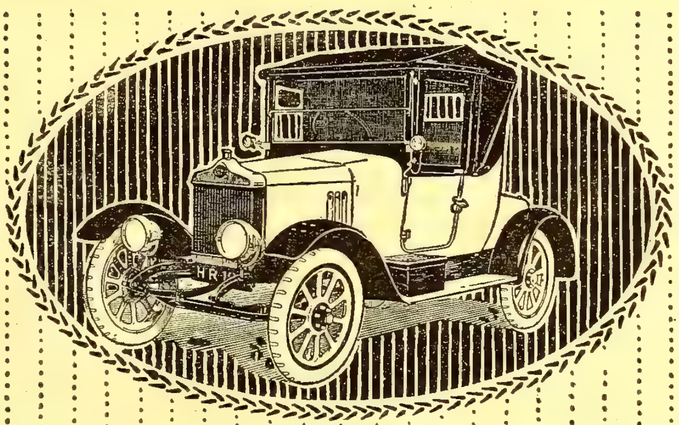
Dealers and commercial consumers requiring motor spirit must therefore call at the local depots of the Distributing Companies and bring with them all empty packages available, as supplies of full packages will be limited to the number of empties returned.

The hoarding of motor spirit, or the use of it by those who do not really require it during the railway strike, is contrary to the public interest.

The Distributing Companies much regret the inconvenience caused which they hope will not be of long duration.



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The Height Record.

The "Commission Sportive" of the Aero Club de France homologated on Oct. 3rd the height record gained by Casale. The height given is 31,230 ft. It is not clear whether or not this is claimed as a world's height record. In any case, it has still to be homologated by the Federation Internationale Aéronautique. Greater heights have been attained lately in America, but have not so far been homologated.

An Attempt on the Speed Records.

M. Sadi Lecointe on Sept. 29th, at Villacoublay, made several attempts on the world's speed record. Flying a single-seated Spad-Herbemont at 5.40 a.m. he made four flights over a five-kilometre course at a mean speed of 167.7 miles an hour. He then flew a two-seated Spad-Herbemont biplane with Bernard, his mechanic, as passenger (his weight is 180 lb.). His mean speed was 133.3 miles an hour.

Later in the day, when the wind had dropped, M. Lecointe flew over the same course on a single-seated Spad-Herbemont at a mean speed of 184 miles an hour, and on a two-seater with M. Bernard as passenger at 175 miles an hour. These two speeds, if homologated by the F.A.I., will constitute world's speed records.

These attempts were controlled by the technical section of the Aeronautical Service.

One congratulates M. Herbemont on the performance of these machines, and it is to be hoped that he is in some way consoled for his ill-fortune in connection with the Schneider Cup race.

A New Aerial Mail Service.

It is reported that a direct postal air service between Paris and Kieff, the capital of the Ukraine, was due to start on Oct. 5th.

A New Caudron Biplane.

On Sept. 27th M. Pierre Chanteloup carried out tests of a new small Caudron biplane. In general appearance it resembles the large two-engined Caudrons, and its landing chassis is not unlike that of the standard Avro biplane. It is fitted with an 80 h.p. Le Rhône engine. The trials were satisfactory.

From Paris to Vittoria.

M. Fronval, on a Morane-Parasol monoplane (110 h.p. Le Rhône), and M. Bourgeois on a Morane-Parasol monoplane (80 h.p. Le Rhône), left Villacoublay at 9 a.m. on Sept. 24th with the intention of flying to Vittoria. They both landed at Angoulême to refill with petrol. M. Bourgeois was unable to restart, owing to lack of petrol, but M. Fronval continued his journey, reaching Vittoria at 1.40 a.m., thus having covered 480 miles in 4 hr. 40 min., including the stop at Angoulême. M. Bourgeois followed him to Vittoria on Sept. 27th. These pilots made a series of flights at Vittoria before the King of Spain and large crowds on Sept. 30th.

They intend to make exhibition flights near various cities in Spain.

The Paris-Melbourne Flight.

M. Etienne Poulet, whose Caudron biplane is now ready, is now only waiting for further permits from the British Government, before beginning the flight. He has purchased this machine at his own expense, and is not financed in any way by Government or private enterprise. He had put two extra tanks in the machine, and will thus be able to carry 121 gallons of petrol.

During the flight he expects to use 2,150 gallons of petrol and 500 gallons of oil. The longest sea crossing will be about 520 miles in length, and the total duration of the flight from Paris to Melbourne is expected to be about 200 hours. The total distance over the route selected by M. Poulet is 13,300 miles.

With him he takes food sufficient for four days, two carrier pigeons, rifles and revolvers.

A correspondent writes :—

Lack of Supervision.

In France, there are no "ground engineers" to control the proper condition of machines before leaving the ground, and the result is a constant series of small accidents, which would be easily avoided with proper maintenance. The propeller bolts breaking on a well-known passenger machine on two occasions recently, provide a typical example.

One company here is providing an excellent example, and that is the "Société de Transports du Sud-Ouest." They run their enterprise with the precision of a military squadron, and change their motors every 50 hours. The result is that they have operated the whole summer without a single accident.

The Cup Deutsch.

The Deutsch Cup is being put up for competition again, and the race will take place on Oct. 13th. A Nieuport 29, with 300 h.p. Hispano-Suiza engine and a Nieuport monoplane, with 180 h.p. Le Rhône, have been entered. Both of these machines have had their wings clipped, bringing the total loading up to about 60 kilos per square metre.

M. Malard, who fell into the Channel when crossing for the Schneider Cup, is the pilot for the Nieuport 29, and M. Jensen is the pilot for the monoplane. M. Sadi Lecointe has entered the Spad 21 with clipped wings, with which he made the air speed record of 288½ kilometres per hour on Tuesday.

The Winter Season.

All the Air Transport Lines operating from Paris towards the North are closing down at the end of October.—J. S.

A Colonial Effort.

According to the "Times" of Sept. 25th two French aviators are to make prospecting flights from Dakar to Timbuctoo, and from Dakar to French Guinea and back.

HOLLAND.

An Avro Circus.

After the close of the E.L.T.A. Exhibition (is it a redundancy to add the word "Exhibition?") on Sept. 14th, three Avro three-seaters and one five-seater flew to Ockenbury, near The Hague. The pilots were Messrs. W. G. R. Hinchliffe, D.F.C., A.F.C., D. Shanks, F. P. Adams, and Smith. There they again found a bad aerodrome, and did not enjoy the best of weather. They stayed there, however, for the 26th, 27th, and 28th Sept., took up passengers, and did quite well. The Avro is already accepted in Holland as, *par excellence*, the machine for pleasure flying.

They next proceeded to Middelharnis and operated there on Oct. 3rd and 4th. This town is a charmingly picturesque capital of an old-world Dutch island, and, as someone remarked, it seemed sacrilege for such a blatantly modern invention as an aeroplane to break on its mediæval calm. Passengers in wooden clogs and flying helmets typified the paradoxical situation. However, the rustic Hollander took to the air as readily as Van Tromp and de Reuter took to the water. The short meeting was a great success, and the enthusiasm of the people was unbounded. All the pilots were garlanded *more Indico* with really beautiful wreaths of roses and other flowers.

The Hollanders throughout were charming hosts, and it was noted that at the E.L.T.A. Herr Fokker seemed to wish to wipe out the memory of certain regrettable incidents in his past career.

But in the Netherlands, as elsewhere, the grumpy farmer provides occasional comic relief. Once Mr. Shanks had a forced landing in a meadow, put things right himself, and flew away. Later, a letter was received from the farmer, backed by the local burgomaster, complaining that in the field there had been a horse which was so frightened by the engine that it had since nearly had an accident. Likewise, two cows had given less milk since the occurrence, and the farmer felt morally convinced that their calves would in consequence be born dead. He thought that 200 guelders (about £20) would no more than meet the moral and material damage.

The three three-seaters flew back to England on Oct. 5th. They carried extra supplies of petrol, landed on the beach at Calais and filled up their own tanks. At Calais they found many disconsolate soldier-men hung up by the strike and unable to spend their leave at home, who piteously begged for "a lift." The mist hung low over the Channel and over Kent, and the last stage of the journey was an anxious time for the pilots, but they felt their way round the hills and arrived safely.

The actual flying time for these three machines on their journey home from Amsterdam was 3 hours 30 minutes.

The pilots are returning by boat to Holland to use the other Avros which are over there to give the Hollanders little more enjoyment—and incidentally to revel themselves in unrestricted butter and sugar.

Memories of E.L.T.A.

Mr. W. R. Kenworthy, the Blackburn test pilot, has returned recently from the Amsterdam Exhibition, where he has been taking up passengers in a Blackburn "Kangaroo" machine for six weeks. His views of the Dutch people and of the Exhibition are interesting, and are as follows :—

The Hollander's enthusiasm for the E.L.T.A. was enormous. They have seen little flying during the war. All classes patronised the show, and more passengers were taken up than even the most sanguine hoped for. The millionth visitor passed the turnstile a few hours before closing time. The Dutch are very good sportsmen and very open-handed. In fact, those at the E.L.T.A. were very much like an English crowd at a 1913 aviation meeting in this country.

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Plating is now out of date for parts which are liable to rust.

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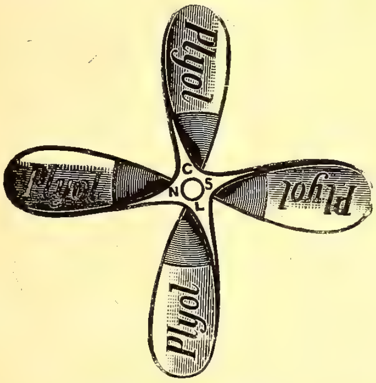

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517A.

A Blackburn Kangaroo, with Mr. Kenworthy as pilot, at Amsterdam.

The Netherlands Court and Government also showed great interest. The Queen, the Prince Consort, and the Queen-Mother visited the show, and the Services were very much in evidence. Mr. Kenworthy had the honour of giving the Secretary of State for War his very first flight—incidentally, the only one he had time to take.

The Blackburn record at Amsterdam has been most satisfactory. Three "Kangaroos" have been out there, one for six weeks, one for a fortnight, and the third for a short week, piloted respectively by Messrs. Kenworthy, Woolley and Veale. They have had no accident either to machine or passengers, and have carried 1,400 paying passengers (roughly 40 per cent. of the total paying passengers taken up by the 32 machines flying there), as well as numerous complimentary passengers. On their record day they carried 90, of whom 75 were revenue passengers. This was a record for the whole show. Everyone liked the machine, and many had repetition flights.

While the passengers were in the air they showed absolute lack of nervousness; they stood up, tried to talk up wind, and hung overboard to a ghastly extent. On one occasion Mr. Veale found the whole crowd standing up, so he locked the controls, turned round, and had a good chat. Perhaps his testimony to the machine is most valuable, because until the day before he flew to Holland, he had never been in a "Kangeroo," and was by conviction a small-machine man. That day Mr. Veale took a short run round, and the next day put off from Brough with his wife, luggage, mechanics, etc.

In all, Mr. Kenworthy covered 8,000 miles. He would have done a good deal more had not the aerodrome sand necessitated a five days' stop owing to the covering of the airscrews suffering from attrition. He regarded his run home as one of the best performances—three hours from the E.L.T.A. to Lympne and two hours from Hounslow to Brough, with a consumption of only twenty-five gallons per hour for the two "Eagle" Rolls-Royce engines.

Financially, the Blackburn Co. are very pleased with the expedition. The receipts and expenses on the first two machines showed such a favourable balance that they judged it worth while for the third machine to go out and back for a bare week's work—and it was worth while, even after allowing an ample overhead figure. Mr. Kenworthy thinks that the Blackburn Co. were the only people to make an actual profit all in; but, of course, this is only an estimate.

A German Effort.

The following advertisement from the Dutch Press may be of interest to the British aerial transport trade :—

> Leaving on October 2nd, the large
>
> Air Limousine,
>
> in which are places for five passengers, from the E.L.T.A. ground to Berlin. Departure 9 a.m. Price, 3,780 marks per person.
>
> Apply to Hôtel des Pays Bas, Amsterdam (Deutsche Luftreederei), (German Air Service).

ITALY.

The Italian correspondent of The Aeroplane writes :—

The Rome-Tokio Flight.

It is announced that Lieut.-Col. Ernest La Polla, one of the best-known pre-war pilots, and an intimate friend of the poet-soldier, Gabriel D'Annunzio, has consented to take command of the Rome-Tokio regularity flight in the place of the latter, who has been quoted as saying that it was merely as a blind that he accepted the Government's invitation to run the affair.—T. S. H.

The Pensuti Triplane.

I learn that the Pensuti triplane is to be built by Ernesto Breda and Co., at Milan, who built the small Ardea biplane.

A Waterplane Meeting.

The National Aerial League's fête at Como has been suspended by the Government. It is hoped that the proposed waterplane meeting may be held which is arranged for the end of September or early October on Lake Como. Signor Janello is to fly at the meeting, and the Powers that govern are to assist.

The Aerial Mail Services.

The "Corriere della Sera" announces that the newspaper aero-mail from Milan to Rome and the inland Sardinian mail are no longer working, though the suspension is, it is hoped, only temporary.

The following further details of the Vickers "Vimy" crash have been received from the Italian correspondent of The Aeroplane :—

On Sept 28th a Vickers "Vimy" No. 1,622, en route for Cairo, without any warning landed at the Vigna Valle (dirigible school of aerial gunnery camp), near Rome. Capt. C. H. Darley was the O.C., with four people on board.

Later on, with three of these four up, the machine left for Rome (Centocello) and flew against a tree, which it transported 100 metres, till fire broke out and the machine crashed. The C.O., bravely sticking to his post, became a victim of the fire, the two others threw themselves out of the machine, Lieut. Curtis being badly hurt, and Airman Holton undamaged. The former is at the Ospedale Civico at Bracciano, Rome.—T. S. H.

SWEDEN.

The Danish correspondent of The Aeroplane writes :—

Under the name of P.O. Flying Company and under the management of the Swedish Lieut. Per Oscar Hirrström, four British flying officers have, during the past summer, carried out a successful passenger joy-ride and stunt exhibition in Sweden with two 110-h.p. Le Rhône Avros and one De Havilland. They are Major H. Rally Johnston, Capt. K. Saunders, and Lieuts. Philips and May. They have inspired so much confidence since their start in July last that more aeroplanes are to be acquired, and a large flying-school is to be opened at Stockholm, according to the "Swedish Motor News." So far the following provincial Swedish cities have been visited : Upsala University town twice, Västerås, Arboya, Köping, Orebro, Eskilstuna, Norrköping, Göteborg, Gäfle, and Falun. —E. H.

SPAIN.

The International Air Convention.

Spain is the first country to put this into operation, and the authorities have arrested several French pilots this week because the papers for their machines were not in order.

SWITZERLAND.

The Aerial Post.

The Swiss aerial post which should have ended on Oct. 1st is to be continued until the end of October. It is thought that this service will be undertaken by a private company.

An Altitude Record.

The Swiss aviator, Prongin, accompanied by M. Haefeli, broke the Swiss altitude record by rising to a height of 7,250 metres on a Haefeli biplane.

Mr. Bradley, who arrived in Lausanne recently to take over the technical direction of the Avro school at that place, has been forbidden to fly by the Swiss Government. No reasons are yet known for this order.

An Aerial Service.

The Italian correspondent of The Aeroplane writes :—

The municipal authorities of Locorno, close to the Italian-Swiss frontier, are considering, in conjunction with a Swiss aerial transport company, the organisation of an aerodrome on the Maggia delta, close to the town. The running of a "Zeppelin" service between Germany and Italy is said to be the reason thereof. Possibly a Zeppelin-built aeroplane service is meant.

Continued mention of some such service is rife, and a descent on the Lombard trading centres is only too likely, considering the Hun interests in the district.—T. S. H.

UNITED STATES OF AMERICA.

The New Use for Flying Boats.

An aeromarine flying-boat circled above the S.S. "Leviathan" at 4 a.m. on Sept. 8th, when she was some distance

By Appointment to H.M. the King.

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ROACH ROAD WORKS, OLD FORD, LONDON, E.

cut at sea from New York, and dropped a mail pouch on the deck. General John J. Pershing was on board the liner and received his important letters and the morning news several hours before reaching the port on his journey from Europe.

A Big Passenger-carrying Machine.

The first Lawson Air Liner, which is said to be the first multi-motored passenger-carrying aeroplane with an inclosed cabin to attempt a cross-country flight in the United States, has recently made a journey from Milwaukee to New York.

The machine started from Milwaukee for Chicago in August. It continued to Chicago and Cleveland. At Toledo the machine was delayed by slight damage caused by it grazing the branches of a tree. It then flew to Buffalo and Syracuse, where a bad landing was made, necessitating a 10 days' stop.

The aeroplane left Syracuse on Sept. 13th with Mr. Alfred W. Lawson as pilot, with an assistant pilot, three mechanics and four passengers. According to the "Aerial Age" of America it reached Mineola, 312 miles away, in 2 hrs. 47 min. The speed averaged was, therefore, 112 m.p.h. The passengers played bridge in wicker chairs.

On Sept. 15th 12 passengers, mostly newspaper reporters, were flown from Mineola to New York.

Hunting with Aeroplanes.

Enthusiastic sportsmen in the Adirondacks think that aeroplanes will soon be used in connection with hunting in the mountains there. It is said to be probable that one of the aeroplanes which has been conveying passengers on sightseeing trips near Lake Placid will be tested shortly with a view to determining its use in locating the haunts and feeding grounds of deer.

Aerial Police Protection.

When the Boston Police Force threatened to strike recently, the manager of the Curtiss Aeroplane Company, of New England, offered the services of his pilots and aeroplanes for aerial police protection. The "Aerial Age" states that it is probable that Boston will soon establish an aerial police department.

Aerial Taxies.

A seaplane made the first metropolitan aerial taxi trip on Sept. 14th. The passengers were a dancer, a reporter, and a dog mascot of the New York Sight-seeing Aero Taxi Company. The fare charged is a dollar a minute, not including war-tax. This strange "taxi" landed its "fares" at the same point from which it picked them up.

Aeroplanes for Business.

Mr. S. E. J. Cox, of Dallas City, Texas, has purchased a Curtiss J.N. biplane. He is an oil-promoter, and has bought the machine for travelling to his various oil wells and refineries, and for advertising purposes. Mr. Cox has purchased also a Curtiss "Oriole" for his own use.

Two Curtiss Agencies.

Mr. William Blair, the manager of the Curtiss agency at Detroit, Mich., is making a flight from Chicago to Detroit in a Curtiss "Sea Gull." He will visit several customers and prospective customers on his journey.

A new company has been formed in San Francisco, named the Earl P. Cooper Co., to act as distributors for Curtiss aeroplanes in the northern half of California and in Nevada. The "Aerial Age" states that a flying school and a number of aerial transportation lines will be operated by the company. Curtiss "Orioles" and "Sea Gulls" will be used. Earl Cooper is a well-known automobile racing driver.

The New York-Toronto Race.

The winner of the reliability test in the International Air Derby has been declared. He is Major R. W. Schroeder, and he flew a Vought V.E.7 fitted with an 150-h.p. Hispano-Suiza engine. In the actual speed contest, noted in last week's issue of The Aeroplane, he was ninth.

In the reliability contest the second, third and fourth places were obtained by Curtiss J.N.-4H machines, and the fifth by a J.N.-4D. The Liberty-engined D.H.4 machines were mostly placed about the middle of the reliability table. Lieut. B. W. Maynard, the winner of the speed contest, was placed ninth, as his machine, a D.H.4 fitted with a 400-h.p. Liberty engine, was very lightly loaded.

The system by which the reliability handicaps were worked out is as follows: The machine's possible useful load was multiplied by its still air speed and divided by its horse-power. This gave an index number showing its ideal performance. By multiplying its actual useful load by its actual speed in the race and dividing that by its horse-power an index number was produced showing its actual performance. The ratio of the index number of the actual performance to that of the ideal performance was then brought to a percentage and the position of the machine in the reliability contest was determined.

The cash prizes for reliability, including the 10,000 dol. given by a hotel syndicate, are to be divided among eight of the nine civilian pilots who completed the course. Even Lt.-Col. W. C. Barker, V.C., D.S.O. (late R.A.F.), who, flying a Fokker, was last but three in the speed contest and last of all in the reliability contest, will receive his share.

Enthusiasm in the States.

It is stated that the Curtiss Eastern Airplane Company of the United States of America, although in existence but a few months, has sold over 75 Curtiss aeroplanes, the majority being Army training machines.

No sooner does a batch of 15 or 20 machines arrive at this company's aerodrome at Pine Valley, than the whole number is sold. It is stated to be impossible even to get a "joy-ride." Other companies appear to find things much the same, so that the future of aviation in the United States seems assured.

MARTINSYDE ACTIVITY.

Martinsyde, Ltd., are embarking upon a fairly extensive programme, ranging all the way from passenger-carrying aeroplanes to bicycles and farm wagons. One hears that drawings for the two latter future products of the firm are being made out, and that special machinery for their manufacture is being installed in various parts of the works.

Among the types of aeroplanes which Martinsyde, Ltd., are constructing and contemplating constructing are some interesting machines. One of these is the machine which they will enter for the Australia flight. This is a dual control two-seater biplane.

The pilot sits in rear of the observer or passenger. The general appearance of this machine is similar to that of the Martinsyde Transatlantic machine. It is fitted with a Rolls-Royce "Falcon" engine of 285 h.p.

Another machine being erected is a three-seater dual controlled biplane, which a film company intend to use for taking pictures from the air. Again, the pilot's cockpit is behind that of the passengers, in which there is room for two persons sitting side by side. The lines of this machine are similar to those of the Australian flight biplane.

A land undercarriage or floats may be fitted. The engine is presumably either a "Falcon" Rolls-Royce or a 300-h.p. Hispano-Suiza.

A three- or four-seater "limousine" biplane is also under construction, intended to carry either passengers and luggage or freight. The pilot sits above the petrol tank, immediately behind the engine. Behind him there are situated a small space for luggage, and then two seats for passengers behind each other, each seat accommodating two persons. The seats may be removed if desired and the space utilised for freight.

Rumour has it that a single-seater biplane will shortly be produced by this firm, somewhat similar to their F.4 machine, but with a greatly increased performance.

It is probable that Martinsyde, Ltd., will devote no small portion of their energies to participation in competition flying.—J. F. S.

A CHANGE OF ADDRESS.

The Palmer Tyre, Ltd., wish it to be known that their Leeds depot has been moved to large premises at York Road, North Street Corner, Leeds. Owing to labour troubles the new depot is still in an unfinished state, but Mr. Pepper, the manager, will give prompt attention to all requirements of the Aircraft Industry and the Motor Trade.

NEW COMPANIES.

Ogilvie and Partners, Ltd.—Private company. Registered Oct. 2nd. Capital, £10,000 in £1 shares. To take over the business of a consulting aeronautical engineer carried on by A. Ogilvie, C.B.E., F.R.Ae.S., at Gwydir Chambers, 104, High Holborn, London, as "Ogilvie and Partners." The subscribers (each with one share) are: A. Ogilvie, 3, Hans Crescent, S.W.1, consulting aeronautical engineer; F. P. Walsh, 23, Cheyne Court, S.W.3, civil engineer. A. Ogilvie is permanent governing director and chairman. Registered office: Gwydir Chambers, 104, High Holborn, W.C.1.

MISAPPREHENSION.

While in the vicinity of Brooklands the other day one heard a small boy remark, as a Vickers "Vimy" machine began to glide towards the aerodrome: "I say, that aeroplane's shut off its steam!" Which reminds one of certain people who, when they saw the exhaust trailing behind an aeroplane, said: "That must be a fighting aeroplane; look at the smoke from the machine-gun." Doubtless people are now better educated in aeronautical affairs, having actually flown, an experience which seems to make most people curious as regards the function of the external and visible components of an aeroplane.—J. F. S.

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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

WAR OFFICE, Sept. 25th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—Flying Officer.—Lt. H. C. Leaver, 4th E. Lan. R., T.F., from a Flying Officer (Observer), March 9th, 1918, with seny. from Dec. 6th, 1916.

Eqpt. Officers, 2nd Class.—Capt. B. Attenborough, 2nd London R., T.F., from the 3rd Class, March 31st, 1918.

3rd Class.—Capt. B. Attenborough, 2nd Lond. R., T.F., and to be secd. Feb. 11th, 1918.

INFANTRY.—GARRISON BATT.—Yorks L.I.—1st Res. Garr Bn.—Temp. Sec. Lt. G. A. Lynch resigns his commn. on appointment to R.A.F., Aug. 8th, 1918.

AIR FORCE.

AIR MINISTRY, Sept. 26th.

R.A.F.—PERMANENT COMMISSIONS.—The following are granted Permanet Commissions in the ranks stated with effect from Aug. 1st:—

Group Capt.—E. M. Maitland, C.M.G., D.S.O., A.F.C.

Wing Commrs.—J. N. Fletcher, A.F.C.; T. R. Cave-Brown-Cave, C.B.E.; W. C. Hicks, A.F.C.; A.D. Cunningham, O.B.E.; J. W. O. Dalgleish, O.B.E.

Sqdn. Leaders.—E. H. Sparling, D. Harries, A.F.C.

Flight Lts.—G. G. H. Cooke, D.S.C., A.F.C.; R. A. Cochrane, A.F.C.; R. S. Booth, A.F.C.; G. M. Thomas, D.F.C.; J. B. Cole Hamilton, T. P. Y. Moore, P. E. M. Maitland, A.F.C.; P. G. N. Ommanney, W. Underhill, D.S.C.; A. H. Wann, T. W. Elmhirst, A.F.C.; I. C. Little, A.F.C.; J. A. Barron, H. L. Rutty, F L. C. Butcher, H. S. Scroggs, E. F. Turner, A.F.C.; R. S. Sugden, A.F.C; R. S. Montagu, D.S.C.; H. V. Drew, A.F.C.; R. V. Goddard, J. H Hagon, A. W. Mylne, C W. C. Browne.

Flying Officer.—S. B. Harris, A.F.C.

The following temp. appointments are made at the Air Ministry:—

Staff. Offr., 3rd Class (Air).—Flight Lt. F. N. Halsted, D.S.C., Sept. 15th (substituted for notification in "Gazette," Sept. 23rd). (P.) Lt. F. W. Memory, Nov. 11th, 1918, and to be actg. Capt. whilst so employed (substituted for notification in "Gazette," Nov. 26th, 1918).

The following temp. appointments are made:—Staff Offrs., 2nd Class.—(P.).—Capt. R. B. Waite, M.B.E., May 1st; (T.) Squadron Ldr. R. K. Pillers, O.B.E., from S.O.1, Sept. 15th.

Staff Offr., 2nd Class (2nd Grade).—Lt. (actg Capt.) A. D. Carey, June 10th, and to be actg. Maj. while so empld.

The rank of Capt. G. S. Lardner is as now described, and not Lt., as stated in "Gazette" of Sept. 9th.

FLYING BRANCH.—Maj. G. P. Wallace, D.S.O., to be actg. Lt.-Col. while employed as Lt.-Col (A.) from Feb. 27th to April 30th.

Maj. N. M. Martin to be Maj. (A.), from (S.O.), from Nov. 20th, 1918, to Dec. 29th, 1918.

Squad. Ldrs (S.O.) to be Squad. Ldrs (A.):—A G. R. Garrod, M.C., D.F.C., Sept. 6th; P. C. Maltby, D.S.O., A.F.C., Sept. 15th.

Squad. Ldr. R. M. Field to be Squad. Ldr. (S.), from S.O.), Sept. 15th.

Capt. L. D. McKean is graded for purposes of pay and allowances as Maj. while employed as Maj. (A.) from May 1st to June 4th.

Capt. I. C. Little, A.F.C., is graded for purposes of pay and allowances as Maj. while employed as Maj. (Airship), May 1st.

Capt. G. E. Livock is graded for purposes of pay and allowances as Maj. while employed as Maj. (S.) from May 1st to June 29th.

Flight Lts. to be Flight Lts. from (S.O.):—C. H. Keith (A.), F. W. Walker, D.S.C., A.F.C. (A. and S.), Sept. 15th; P. J. Sumner (K.B.), Sept. 10th.

Capt. E. M. Pizey is graded for purposes of pay and allowances as Capt. while empld. as Capt. (A.), Nov. 25th, 1918.

Lts. to be actg Capts. while empld. as Capts. (A.):—(Hon. Capt.) A. Storey, D.F.C., from Nov. 21st, 1918, to April 30th; C. E. Maitland, D.F.C., July 14th.

Lt. O. R. Gayford, D F.C., to be actg. Capt. while employed as Capt. (O.), May 1st (substituted for notification in "Gazette" of July 22nd).

Lt. (Hon. Capt.) A. Storey, D.F.C, is graded for purposes of pay and allowances as Capt. whilst employed as Capt. (A.), from May 1st to June 15th.

Lt. E. M. Henderson relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt (A), July 25th.

Flying Off. F. C. Deane to be Flying Off. (O.), from (Ad.), Aug. 30th.

Flying Off. A F. Lang to be Flying Off. (O.), to (T.), Aug. 1st.

Sec. Lts. to be Lts.:—Hon. Lt W. Bagnall, April 2nd, 1918; G. B. Emery, April 25th, 1918; F. Wood, Oct 26th, 1918; W. R. N. Cheetham, Jan. 5th; L. Walsh, Jan. 16th; F. W. Dunnett, Feb. 16th; E. P. C. Godsil, April 2nd; O. V. Lee, R. D. Rogers, April 25th; A. N. Abbott, May 8th; J. G. Walton, June 6th; V. G. Record, June 13th; L. T. Wilson, July 5th; W. Urwin, July 10th.

Sec. Lt. S. W. Tinham (late Gen. List, R.F.C., on prob.), is confirmed in rank as Sec. Lt. (A.), July 29th, 1918.

177058 Cdt. J. H. R. Hopkins is granted a temp. commn. as Sec. Lt. (O.), Nov. 10th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. J. M. M. Hume (Lt., Black Watch), Feb. 24th; Lt. R. Whyte, May 20th; Lt. A. H. A. Alban, D.F.C (Lt., R.A.), Lt. A. M. Diamant (Lt., R.A.), Aug. 26th; Lt. (Hon. Capt.) E. J. Long (Capt., Gordon Highrs.), Aug. 27th; Sec. Lt. (Hon. Lt.) P. N. Melitus (Lt., R. War. R.), Aug. 30th; Sec. Lt. (Hon. Lt.) N. MacLeod (Lt., Seaforth Highrs.), Sept. 1st; Sec. Lt. (Hon. Lt.) D. Neil (Lt. Can. Forestry Corps), Sept 3rd; Sec. Lt. T. W. Woodrow (Lt., R.A.), Sept. 6th; Lt. W. E. Davis, M.C. (Lt., Gloucester R.), Sept 11th; Lt. W. D. Robertson, (Lt., R.E.), Sept. 18th.

The following are transferred to the unemployed list:—Sec. Lt. W. G. Bamber, Sec. Lt R. E. Bennett, Sec. Lt. H. E. Collins, Sec. Lt. F. B. Common, Sec. Lt. J. W. Crawford, Sec. Lt. L. B. Dixon, Sec. Lt. W. J. Eastman, Sec. Lt L. P. Flynn, Sec Lt. E. Laver, Sec. Lt. J. H. Mahoney, Sec. Lt. I. A. Robertson, Feb. 1st; Lt. G F. Anderson, Mar. 1st; Lt. L. M. Archibald, April 10th; Sec. Lt. C C. H. Grosse, April 13th; Sec. Lt. (Hon. Lt.) R. W. Harvey, April 27th.

Lt. A. J. Amor (R.G.A.), May 2nd (substituted for the "Gazette" of May 9th, wherein this officer was described as Lt. J. A. Amor); Lt. A. F White, May 14th; Lt. F. L. Smith, June 12th; Sec. Lt. H. S. Moore, July 11th; Sec. Lt. J. W Bishop, Sec. Lt E. H Brown, July 12th; Sec. Lt. A. E. Stephenson (substituted for the notification in the "Gazette" of July 29th); Sec. Lt. F. C. Adams, July 17th; Pilot Offr. R. J. Brotherton, A.F.C., Aug. 1st; Pilot Offr. (Hon. Flying Offr.) A. R. Cowan, Aug. 19th; Flying Offr. A. Perren, Aug. 21st (substituted for the notification in the "Gazette" of May 13th; Pilot Offr. J. H. McLellan, Aug. 22nd; Flying Offr. N. R. Anderson, Pilot Offr. R. F. Angus, Pilot Offr. R. Stowell, Aug 29th; Flying Offr. L. S. Latham, Sept. 1st; Flying Offr. G. H. Vasse, Sept. 3rd; Flying Offr. W E. Hazelton, Flight Lt. H. A. Page, Sept. 7th; Pilot Offr. G. F. Anderson, Pilot Offr. H. Bell, Flying Offr. A. R. Dalby, Pilot Offr. L. P. B. Faddy, Sept. 8th; Flying Offr. W. Allen, Pilot Offr. J. H. Grierson, Flying Offr. R. R. Heaton, Flying Offr. D. S. St. A. McCulloch, Flying Offr. W. D. Renshaw, Pilot Offr. L. F. Shipp, Pilot Offr. E. H. Van der Riet, Sept. 9th; Pilot Offr. R. H. Coath, Flying Offr. E. A Seymour, Pilot Offr L. G. Warren, Pilot Offr. F E. West, Flying Offr. A. S. Wilcockson, Sept. 10th; Pilot Offr. F. Allsop, Pilot Offr. W. R. Bannister, Flying Offr. J. G. Gore, Flying Offr. W. M. Hirst, Flying Offr. L. F. Hodges, Pilot Offr. G. H. Knight, Flying Offr. A. C. Campbell-Orde, Pilot Offr. S. Poole, Flying Offr. G. B. Powell, Pilot Offr. L. E. Tremayne, Sept. 11th; Pilot Offr. (Hon. Flying Offr.) H. E. Ford, M.C., Pilot Offr. F. W. Morgan, Pilot Offr. J. F Newton, Flying Offr. R. A. Spencer, Flying Offr. R. C. Stokes, Flying Offr. J. G. Sutton, Pilot Offr. G. Wilkie, Flying Offr. T. H. Wood, Sept. 12th; Pilot Offr. J. R. Jones, Pilot Offr. P. F. T. Luckham, Pilot Offr. H. W. Ogg, Pilot Offr. V. J. W G. Shaw, Flying Offr. J. A. Shearer, D.F.C., Flying Offr. D. L. Walker, Sept. 13th; Pilot Offr. R. G. Adams, Flying Offr. H. W. Chattaway, Sept. 17th; Flight Lt. H. A. Laycock, D.F.C., Sept. 20th; Flying Offr. F I. Fleming, Pilot Offr. H. B. L. Wilkinson, Sept. 23rd; Flying Offr O. H. Curry, Sept. 24th; Flight Lt. B A. Taylor, M.B.E., Sept. 25th.

Capt. A. H. Dalton (Lt., Hussars) resigns his commn., Sept 27th.

Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—A. Hartley, May 6th (substituted for notification in "Gazette," May 16th); H. H. House, Sept. 9th.

Lt. S. A. Harper, M.C. (Lt., Cheshire R.), resigns his commn., Sept. 27th.

Sec Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—W. P. Wemple, July 12th; T. V. J. Nicholas, July 18th (substituted for notification in "Gazette," July 29th, wherein this officer was described as Sec. Lt. T. U. J. Nicholas).

Capt. K. G. MacDonald to take rank and prec. as if his appointment as Capt. bore date July 1st, 1918

The initials of Sec. Lt. E. W. Cowdery are as now described, and not "E. I.," as stated in "Gazette," July 1st.

The initials of Lt. N. P. Edwards are as now described, and not "J. P.," as stated in "Gazette," Aug. 22nd.

The Christian names of Sec. Lt. Gerald Marcus Jackson Morton are as now described, and not as stated in "Gazette," Aug. 30th, 1918.

The notifications in "Gazette," March 28th, concerning Sec. Lt. E. C. Heyes and Lt. C A. Jordan are cancelled.

The notification in "Gazette," June 20th, concerning Lt. J. W. S. Mellish is cancelled.

The notification in "Gazette," June 11th, concerning Sec. Lt. T. C. Stranger is cancelled. The notification in "Gazette," Aug. 12th, stands.

The notifications in "Gazette," July 25th, concerning Sec. Lt. T. K. Ludgate and Sec. Lt. W. P. Wemple are cancelled.

ADMINISTRATIVE BRANCH.—Wing Commander R. E. M. Russell, C.B.E., D.S.O., to be Wing Comdr., from (S.O.), Aug. 30th

Sqdn. Leader A. J. Currie to be Sqdn. Leader, from (S.O.), Sept. 3rd.

Capt. A. W. Crombie to be Capt., from (T.), July 19th (substituted for notification in "Gazette," Aug. 1st).

Flt. Lts. to be Flt. Lts., from (S.O.):—E. O'D. Crean, Aug. 29th; F. F. Lloyd, Sept. 1st; A. M. Waistell, Sept. 14th; H. G. Hutchinson, Sept. 15th.

Flt. Lt. J. W. Havers to be Flt. Lt., from (A'ship), Sept. 9th.

Lt. G. Roberts to be actg. Capt whilst empld. as Capt., June 3rd.

Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts.:—P. E. D. Addis, W. Halliwell, F. J. Logan, T. Mack, May 1st; V. G. Davis, to July 14th); (Hon. Capt.) J. R. Gould, May 16th.

Flg. Offr. (actg. Flt. Lt.) J. C. Cantrill relinquishes the actg rank of Flt. Lt. on ceasing to be empld. as Flt. Lt., Sept. 3rd.

Flg. Offr. F. Pratt relinquishes the grading for pay and allowances as S.O.3 on ceasing to be specially empld., Sept. 2nd.

Flg. Offrs. (A.) to be Flg. Offrs.:—O. D. Freeman, Aug. 1st; G. N. Prout, Aug. 21st.

Lt. I. MacL. Moffats to be Lt., from (O.), Jan. 20th (substituted for notification in "Gazette," March 4th, wherein this officer's rank was shown as Sec. Lt.).

Flg. Offrs. to be Flg.Offrs., from (S.O.):—J. Duncan, Sept. 1st; W F. Duff, Sept. 4th; G. D. Ashby, P. A. Simmonds, Sept. 15th.

Flg. Offr. (Hon. F./Lt.) E. J. Langridge, M.B.E., to be Flg. Offr., from (T.), Sept. 1st.

Lts. and Qmrs., Gen. List, are granted temp. commns as Lts.:—J. Hicks, G. Roberts, J. Sims, May 27th, 1918.

Sec. Lts. to be actg. Lts. whilst empld. as Lts.:—W. Fell, Oct. 1st, 1918, to April 30th (substituted for notification in "Gazette," Nov. 26th); J. Mellor, Nov. 15th, 1918 to April 30th.

Sec. Lts. to be Lts.:—F. H M. Francis-Hawkins, Dec. 15th, 1918; G. E. Shipp, April 11th.

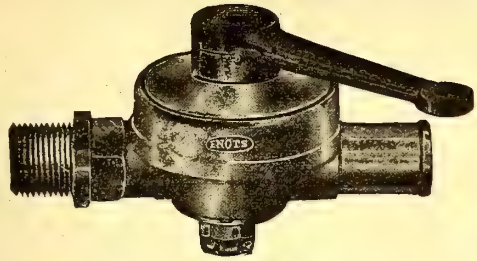
Sec. Lt. J. H. Grey to be Sec. Lt., from (S O.), Jan. 3rd (substituted for notification in "Gazette," March 25th).

The following relinquish their commns. on ceasing to be empd.:—Lt. J. B. Edgar (Capt., R. Sco Fus.), Oct. 11th, 1918; Lt. C. B. Millett, Feb. 28th; Lt. C. P. Sisley (Lt., R.G.A.), June 17th; Lt. J. D G. MacRae (Lt., Sea. Highrs.), June 30th; Capt. S. C. Renny (Capt., K.O.S.B.), July 1st; Sec. Lt J. G. Berry, Aug. 24th; Capt. G. W. Bright (Lt., R.N.R.), Aug. 26th; Capt. P. F. J. Kent (Lt., Dgn. Gds.), Sept 6th.

The following are transfd. to unempld. list:—Lt. C. A. Jordan, Feb. 11th; Sec. Lt. E. C. Heyes, March 11th; Sec. Lt. T. K. Ludgate, April 27th; Sec. Lt. H. E. Barry, July 10th; Pilot Offr. C. Armstrong, Aug. 2nd; Pilot Offr. A. N. Burrow, Sept 8th; Pilot Offr. A. G. Adams, Flt. Lt. J. H. N. H. Burke, Sept. 10th; Flg. Offr G. A. MacMillan, Sept. 12th; Pilot Offr. C. W. Braddy, Sept. 13th; Pilot Offr. (Hon Flg. Offr.) D. B. Martin, Sept. 14th; Pilot Offr. J. E. G. Rochemonte, Sept. 24th.

Capt. W. S. Cole, C.G.M., D.S.M., relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Sept. 17th.

Lt. (Hon. Capt.) F. J. Smith relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain the rank of Capt., Sept. 9th



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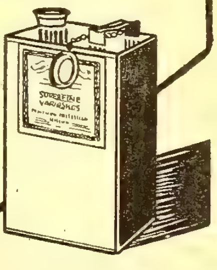

Sec. Lt. W. K. Holmes relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Sept. 19th.

The notification in "Gazette" Feb. 28th concerning Lt. J. Handley is cancelled.

The notification in "Gazette" of April 4th concerning Lt. C. B. Milett is cancelled.

The notification in "Gazette," May 27th, concerning Lt. N. M. Hoskins is cancelled.

The notification in "Gazette," June 3rd, concerning Sec. Lt J. Macarthy is cancelled.

TECHNICAL BRANCH.—Maj. G. P. Grenfell, D.S.O., is graded for purposes of pay and allowances as Lt.-Col. while employed as Lt.-Col., Grade (A.), from May 1st to July 31st (substituted for notification in "Gazette," Sept. 9th).

Maj. T. H. Vitty to be Maj., Grade (A.), from Grade (B.), July 24th.

Capt. F. H. Songhurst, M.B.E., is graded for purposes of pay and allowances as Maj. while employed as Maj. Grade (A.), from May 1st to July 31st.

Lt. A. H. Hughes to be actg. Capt. while employed as Capt., Grade (A.), June 20th.

Lt. H. F. Wilkinson is graded for pay and allowances as Capt. while employed as Capt., Grade (A.), May 1st.

Lt. (Hon. Capt.) C. Chapman, D.S.C., is graded for purposes of pay and allowances as Capt. while employed as Capt., Grade (A.), from (O.), from June 4th to July 31st.

Flight Lt. O. S. Stiles to be Flight Lt. Grade (B.), from K.B., Sept. 15th.

Sec. Lts. to be actg. Capts. while employed as Capts., Grade (B.):—H. C. Hull, from Jan. 12th to April 30th; (Hon. Lt.) W. A. Winter, May 1st.

Flying Offrs. to be Flying Offrs., Grade (A.):—H. Norrington, from (S.O.), Sept. 2nd, H. W. Armstrong, from (K.B.), Sept. 9th.

Sec. Lt. (actg. Lt.) J. A. Joyce to be actg. Lt. while employed as Lt., Grade (A.), from Grade (B.), from Nov. 8th, 1918, to April 30th.

Flying Offr. J. M. McEntegart to be Flying Offr., Grade (B.), from (S.O.), Sept. 15th.

The following relinquish their commns. on ceasing to be employed:—Capt. G. H. J. Mercer (Lt D. of Corn. L.I.), Sept. 1st; Col. the Hon. A. Stopford, C.M.G. (Capt., R.N.), Sept. 13th.

The following are transferred to unempld. list:—Sec. Lt V. Sands, March 11th; Lt. N. Haig, May 28th; Flg. Offr. E. W. Dormer, Sept. 1st; Flt. Lt. R. G. G. Maund, Sept. 8th; Flt Lt. A. Clayton, Flt. Offr W. T. Curtis, Flg. Offr. B. Hesketh, Flg. Offr. J. Morris, Flg Offr. (Hon. Flt. Lt.) R. W. Morison, Sept. 9th; Flg. Offr. A. Charig, Sept. 10th; Pilot Offr. M. J. Curtis, Pilot Offr. E. J. Totoonchie, Wing Cmdr. J. L. Travers, Sept. 11th; Flg. Offr. A. S. A. Herne, Flg. Offr. K. S. Hughes, Sept. 12th; Pilot Offr. W. S. Jackson, Sept. 13th; Pilot Offr. W. Littlemore, Sept. 17th.

Lt. A. L. C. Fuller (Lt., Dgn Gds.) resigns his commn., Sept. 22nd.

Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—T. A. Russell, Sept. 6th; G. Spurgen (contracted on active service), Sept. 10th.

The surname of Capt. G. L. Godden is as now described, and not "Gooden," as stated in "Gazette" of Aug. 19th.

MEDICAL BRANCH.—Capt. T. E. Mulvany relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Aug. 13th (substituted for notification in "Gazette" of Sept. 2nd).

CHAPLAINS BRANCH.—The Rev. A. J. N. Saunders is transferred to unempld. list, May 27th.

MEMORANDA.—Sec. Lt. (Hon. Capt.) F. C. Marsh is granted the hon. rank of Maj., July 4th.

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases:—316105 C. D. Hooper, 184852 H. S. Morris (since killed).

Pilot Offr. (Hon. Flg. Offr.) W. E. Cowie is transferred to unempld. list, from (S.O.), Sept. 3rd.

The surname of G. H. Piercy is as now described, and not "Piercey," as stated in "Gazette" of June 24th.

PERSONAL NOTICES.

MILITARY.

ENGAGEMENTS.

ATTWATER—WHEATLEY.—The engagement is announced between Lieut. Harry Fletcher Attwater, Northumberland Fusiliers (att. R.A.F.), eldest son of the late Rev. H. S. Attwater and Mrs. Attwater, of Lytham, and Winsome Wingate Wheatley, elder daughter of Lieut. Colonel J. P. D. Wheatley, R.A.F., and Mrs. Wheatley, Carlisle.

BROOKE—IRWIN.—A marriage has been arranged between Captain Arthur Brooke, 10th Hussars, attd. R.A.F., younger son of the late Sir Douglas Brooke, Bart., and Lady Brooke, of Colebrooke, Brookeborough, County Fermanagh, and Lilian Maud (Lola), daughter of the late Mr. Charles B. Irwin, of Drumglass House, Dungannon, and Mrs. Orpen-Palmer, The Barracks, Birr.

SETH-SMITH—MCKERGOW.—The engagement is announced between Kenneth Arthur Seth-Smith, 5th Fusiliers, attached R.A.F., youngest son of Mr. and Mrs. Martin Seth-Smith, Colwood, Bolney, Sussex, and Doris Roberta, only daughter of Lieut.-Col. R. W. McKergow, O.B.E., M.F.H., and Mrs. McKergow, Twineham Grange, Sussex.

BIRTH.

DISNEY.—On Sept. 22nd, at Heronsgate, Rickmansworth, Herts, to Lieut.-Col. H. A. P. Disney (late T.F. and R.A.F.) and Mrs. Disney—a son.

AIR FORCE.

MARRIAGE.

GIBSON—BORWICK.—On Sept. 10th, at Toronto, Canada, Lieut. Campbell Blakeley Gibson, late R.A.F., eldest son of Mr. Campbell B. Gibson, of Welland, Ontario, was married to Beatrice, youngest daughter of Mr. Charles Borwick, of 168, Blythwood Road, Toronto, Canada.

BIRTHS.

DURSTON.—On Sept. 29th, at "The Rays," Ryde, I.o.W., to Vera, wife of Capt. A. Durston, A.F.C., R.A.F.—a daughter.

McMINNIES.—On Oct. 2nd, at 18, Gloucester Road, Birkdale, Southport, the wife of Major W. G. McMinnies (late R.A.F.), of a son.

TAIT.—On Sept. 30th, at a nursing home, Southsea, to Sybil (née Sparkes), wife of Capt. W. M. Tait, A.F.C., R.A.F.—a son.

BALLOONS FOR CONSUMPTIVES.

The following, by the medical correspondent of "The Times," appeared on June 16th:—A short time ago it was suggested in "The Times" that the good effects of a high-altitude sanatorium might be obtained by means of captive balloons. The point was made by Surgeon Anderson in a recent work on the medical aspects of flying. In its last issue the "British Medical Journal" deals with the matter under the heading of "Aerial Spas," and makes reference to another article on the subject, by Captain Brown, R.A.M.C., appearing in the "National Review."

The idea, as we pointed out before, has a good deal of scientific backing. An atmosphere entirely free from germs is one of the medical attractions of the Swiss mountain resorts. This can be obtained at 5,000 ft. above any English town. Tubercular patients might thus be able to have sanatorium treatment of a new kind after the same manner.

That the subject is being considered in a serious spirit is proved by the fact that the "British Medical Journal" received an article recently from an officer of the Royal Army Medical Corps, in which he worked out in some detail the requirements for fitting out a captive airship as a tuberculosis sanatorium. There are, however, various questions of atmospheric pressure and density which have an important bearing on the subject. These questions are not yet fully understood, though careful researches have been carried out on mountain sickness and allied states by Barcroft and others. The field opened up is interesting, and may be valuable.

G. R.

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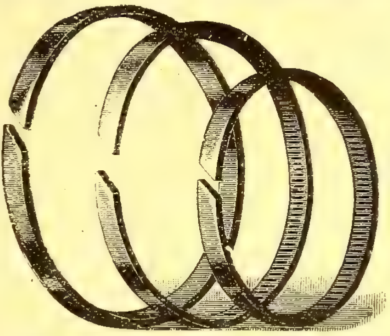

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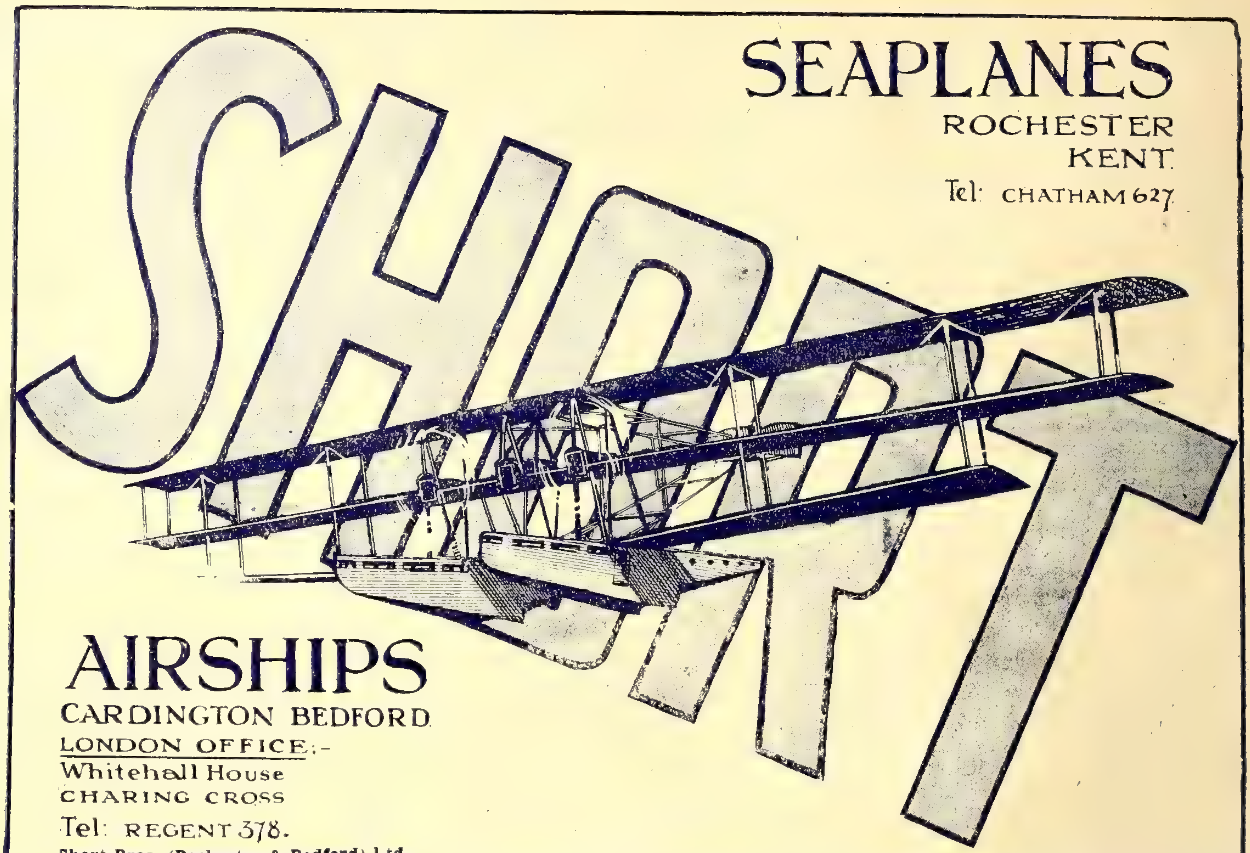

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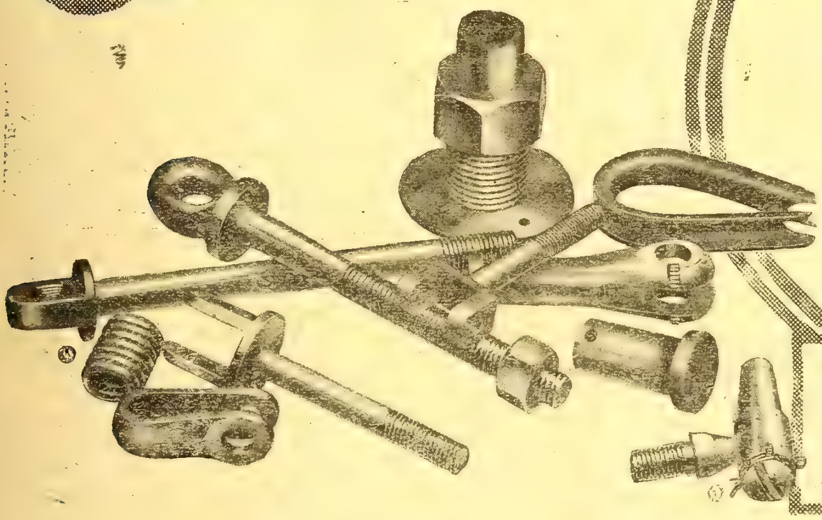

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ON THE COMING OF AERIAL TRANSPORT.

A PROPHETIC EFFORT AND A MINOR REVELATION.

All who are in any way believers in the future of aviation can foresee the period when those who wish to travel with speed and in comfort will fly in preference to travelling by land or water. Also, as one has pointed out in these notes from time to time, it is fairly evident that regular transport and travel by air will come as a natural process of evolution from that species of flying which is commonly called "joy-riding": just as motor transport developed from the fearsome joys of the "get out and get under" days of early automobiles, and as the bicycle has become merely a geared-up auxiliary to the human boot after being a mechanical aid to sport developed from the neck-breaking fascinations of that extraordinary vehicle paradoxically known as the "ordinary" bicycle.

But the difficulty has been to discover the precise state of affairs which will give to flying that impulse which will, so to speak, cause the precipitation of joy-riding and crystallise it into firmly established aerial transport. One believes that at last one has discovered this impelling cause which has hitherto been so obscure.

So far, all our visions of future aerial transport has been based on pure faith. And it will be remembered that an inspired schoolboy once defined faith as "believing what you know isn't true." The eye of faith has seen the future of flying for centuries, but it has been the intermediate steps which have never seemed true.

The first true step was seen when Orville Wright held a flying-machine off the ground for a few yards in December, 1903. Since then we have advanced somewhat, but the top step has always remained invisible. Now at last it seems to be in sight, though we shall take some time to reach it. Therefore one proposes to venture on a little prophecy by way of showing the process by which we may arrive at our goal.

PROPHECY AND PRACTICE.

But, first of all, one would like to express one's indebtedness to Mr. Cramp, Mr. Thomas, and the National Union of Railwaymen for this minor revelation which has enabled one to see clearly the Coming of Aerial Transport. But for their strike one might still be groping in the dark and seeing only with the eye of faith. To-day one sees more clearly in the light of the great Laws of Cause and Effect, and of Supply and Demand. Let us then consider the matter.

Primarily, when a man (as usual, embracing woman) travels from place to place he wishes to do so as quickly and as comfortably as possible. The railway train succeeded because it was quicker and smoother than the stage coach. The motor-car is superseding the railway train because for journeys up to 150 miles or so it is quicker and less tiring to get into a car at one's own door and alight at one's destination than it is to go to a railway station, wait for a train (or, alternatively, worry about catching a train and hustle into it at the last moment), sit in a stuffy carriage with unpleasant people, and finally scramble for a porter and a cab to take one to the end of the journey.

All who can afford to keep a car, and many who cannot but do, travel by road in these days in preference to travelling by train. Even those who neither can nor do keep a car travel by road when possible. Hence the rapidly growing popularity of that horrific mechanism the motor *char-á-bancs*.

Furthermore, the increasing reliability of internal-combustion engines, the success of mechanical transport during the war, and the tens of thousands of men and women who have been educated by the war in the driving, maintaining, repairing and organising of motor vehicles, are all combining to bring more and more motor vehicles onto the roads. The result is that already the roads are becoming uncomfortably crowded. And the increase has been particularly noticeable in the past two months.

THE REVELATION.

Some two or three months ago an R.A.F. officer lately returned to the motor trade remarked that during the previous week-end he had been out testing a new fast foreign car, and that never once was he able to find a clear stretch of road where he could let her out and try her best speed. Since then one has done a good deal of driving on a British car which is very far from fast, and even on that it has been difficult to find opportunities for "letting out" at any time of the day or week.

Even on the Coventry-London road one was constantly held up by traffic jambs. Coming up from Southampton one afternoon it was not possible even once to rush a hill, because on every hill there were always two, and sometimes three or four, motor vehicles proceeding in opposite directions and blocking the road.

Then came the strike. Every available motor vehicle was put on the road. The pace of the traffic in London itself became slower than the pace of a four-wheeled horse-cab.

One day, going down the Bath road in a hurry, one found that the traffic was thicker fifteen miles out from London than it was in Oxford Street before the war. At last one found what looked like a clear run of a few hundred yards and opened the throttle. Before the speed had risen much above the legal limit another batch of vehicles came round a corner, on went the brakes, and one cursed the traffic and the roads and the drivers, and especially the railways which ought to have been carrying all this stuff but were not. Then the quiet little woman sitting beside one said gently: "It's no good. We shall have to fly."

THE LOGICAL DEVELOPMENT.

And when you come to think of it, that is the only logical development from the state of affairs which is going to arise in the very near future, though at first sight it seems like a revelation.

Every motor factory in this country is going full speed ahead with vehicles of all kinds, from lorries to cycle-cars. There are tens of thousands of vehicles on order in America and France. And, despite the pious resolutions of those papers which vowed never to accept enemy advertisements, there will be thousands of German cars brought into Great Britain in the next year or so.

The result will be that if only half the motor vehicles which are on order to-day are put on the roads during the next twelve months the traffic on our main roads in the country will be as thick as our street traffic was before the war. And the average speed of that traffic will be as low as was the speed of pre-war street traffic.

Already the motor manufacturers seem to realise that the day of the fast touring car is gone, for wherever one goes in motor-car or body works one finds an increasing number of limousine or landaulet or coupé bodies being built. In fact, at one big shop—formerly devoted to aeroplane production—all the work was being done on closed cars; and at another, out of 18 bodies in course of construction, 16 were coupés. Which means that the motor trade is selling town carriages and not fast long-distance cars.

THE HELP OF THE RAILWAYS.

Over and above this it is well to remember that already the railways are practically State-controlled—which means that they are not controlled at all, and are rapidly deteriorating from being the most efficient railway system in the world, under the spur of mutual competition, into the usual slackness of a Government job run by amateur politicians. Ere long our railways will doubtless be State-owned, and so will sink to the level of our telephone system.

This will naturally be a very great help to aerial transport, for when it takes 6 or 7 hours to get to Manchester or Liverpool by rail by "State express service" consisting of 2 or 3 trains a day—instead of 4½ hours with 6 or 7 trains a day under business management—people who are bent on business will obviously prefer to fly the distance in an hour and a half. And if the Aircraft Industry is half awake to its opportunities it will start at once to prepare for regular passenger services.

A MISPLACED HOPE.

The objection has been raised by certain "doubting Thomases" that the Ministry of Transport under the versatile Sir Eric Geddes intends so to improve our roads that our road traffic will be able to circulate rapidly and safely. This hope of improvement displays a lack of knowledge of that elemental fact—with which Mr. Fairey made such useful play at Bournemouth—that the whole fabric of British Society is based on the Land Laws, and that it takes a separate Act of Parliament to remove any land boundary.

Even if power were given to the Ministry of Transport by a single Act to commandeer any land required for road improvements it would take fifty years to widen and straighten our main roads—leaving by-roads out of the question. And strikes by the Amalgamated Society of Road Makers would probably add another ten years to that. So the progress of this new Eric will be, like that of his more famous name-sake, little by little, in spite of all his bull-at-a-gate methods.

Also, the output of motor vehicles will certainly increase very much faster than the roads can be improved to carry them. This much can be seen in the United States to-day, where every road within twenty miles of a big city carries a constant procession of motor vehicles. And in America, be it remembered, the authorities have a much simpler job, for they have only to make new roads through open country, whereas in this country roads, villages, and towns will have to be altered all at once if the traffic is to move as it should.

Moreover, the present absurd speed-limit will have to be removed. And that means another Act of Parliament.

AMERICA'S BEGINNING.

Those who take the trouble to read carefully the notes on Commercial Aeronautics in this paper will have grasped already the fact that aeroplanes are being sold in the United States to private individuals at a far greater rate than they are being sold here. And this in spite of the fact that a lot of the stuff which the good Americans are buying is of a kind that no self-respecting British aviator would fly.

Some of these machines are being bought simply for advertisement, but one hears that the majority are bought by people who really want to use them for personal transport, either because the existing roads in the States are so crowded that there is no fun in motoring, or because there are no roads at all. Which is merely another example of extremes meeting.

THE AERODROME TROUBLE.

Another objection which has been raised is that, even if the Aircraft Industry does pluck up courage and establish regular air lines, it is going to take at least as long to get from the centre of any city to the aerodrome as it does to get from the centre to the railway station, if not longer. That is true at the moment, but it seems possible that the aerial transport firms themselves may organise motor services to the aerodromes which will overcome this trouble. And in the case of London, long before the war it was accepted as a fact that the Golder's Green Tube was to be extended to the London Aerodrome at Hendon.

Other cities which are not blessed with Tubes will perhaps in time develop municipal aerodromes with a municipal tram or 'bus or car service to and fro. And the smaller towns and bigger villages will be able to establish aerodromes quite close to their borders.

THE SIMPLE SOLUTION.

There is, however, a still simpler solution of the difficulty. That is not to bother about aerodromes at all—except as garages—and to equip all the important aerial transport lines with amphibious machines which can start from and alight on land or water equally easily.

There is no difficulty about building such machines for civilian work. The first Sopwith "Bat-Boat" was an amphibian, and won the prize offered by Mr. Mortimer Singer for an all-British machine of this kind. The offer of the prize is evidence of Mr. Singer's foresight, and the fact that nothing has been done since 1912 to develop the type until the conditions were issued recently for the Government's 1920 Competition is no credit to the British Aircraft Industry nor the Technical Department at the Air Ministry, nor to the Royal Aero Club, which is supposed to interest itself in the Sport of Aviation—a sport for which the amphibian is particularly suited.

Every great city has a ready-made aerodrome on the river which has made it a great city. And in the case of the few cities which have grown large owing to some special industrial cause—such as Birmingham and Manchester—it might well be easier to form a big lake than to build a land aerodrome. One forgets the exact size of the Edgbaston Reservoir at Birmingham, but one seems to remember that it is big enough to be used by seaplanes, and it is very much more accessible than the Castle Bromwich aerodrome.

Of our greatest cities, London, Liverpool, Hull, Portsmouth, Southampton, Plymouth, Falmouth, Bristol, Edinburgh, Glasgow, Dublin, Belfast, Cork, Londonderry, Dundee, and Aberdeen are all so situated that amphibious aeroplanes can penetrate almost to their business centres, whereas in every case their nearest land aerodromes are miles outside the city boundaries.

The Matter of Cost.

The greatest hindrance at the moment is the question of cost. Few can afford the prices charged to-day for aerial transport. Who could pay £15 15s. for a single fare to Paris, or £25 to Swansea (apart from the fact that most people would pay as much to avoid going to Swansea)? Prices must come down. And they will come down as soon as those who are responsible awake to the fact that supply creates demand just as much as demand creates supply.

Petrol must come down to a shilling a gallon instead of its present abnormal price. If not, we must use benzol or adapt our engines for alcohol. Already one knows that aero engines have done good work on benzol.

Then the cost of engines must come down. Already one great firm has taken the first step towards supplying thoroughly reliable engines at a price which brings the complete three-seater 100-mile-an-hour aeroplane inside £1,000.

And aero-engine makers who charge that sum, or double that sum, for an engine alone will do well to remember that their present engines have not to bear the heavy charges of tests and experiments, for all those costs have already been paid by the Government during the war. Therefore all they have to reckon in their costs is material and labour, plus overhead factory and selling charges.

Perhaps few of them have considered that a £2,000 engine means a charge of £200 per annum on the aeroplane simply as interest on capital invested and allowing nothing for depreciation. Allowing the engine 1,000 hours' flying in the year, this means 4s. per hour capital charge alone. The point is worth considering. Engine prices must come down, and the sooner they come down the greater will be the sales and the greater the ultimate profits to the makers.

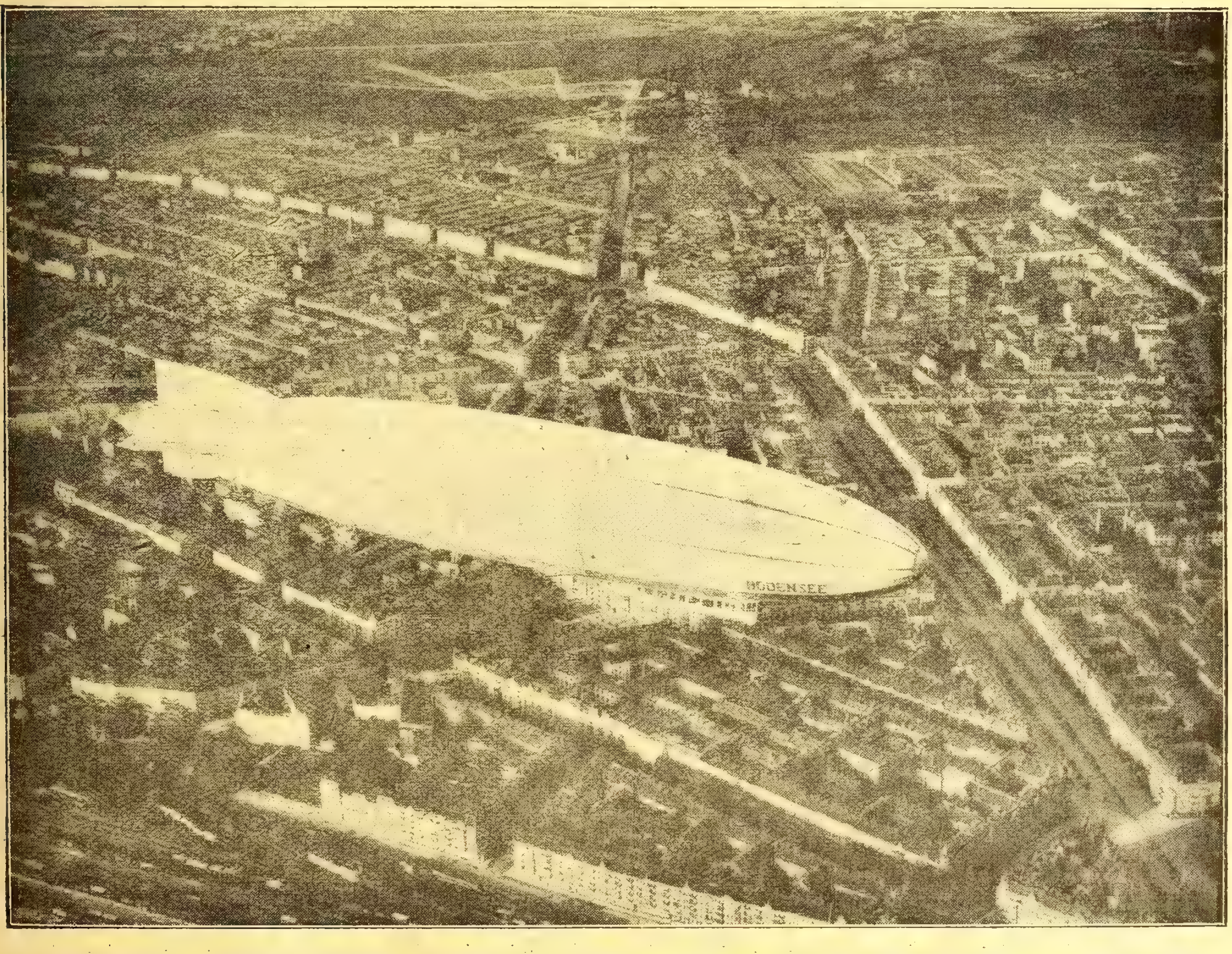
The demand already exists for aerial transport. The Avro Company's work in carrying 30,000 passengers (which means at least 300,000 passenger-miles) without killing one of them shows that travelling by Avro is safer than travelling on an American railway. Similarly, the Airco's seven weeks of regular service to Paris with only one failure to start, and without a serious accident to any passenger, shows that aerial transport is safe. The Handley Page service to Brussels, though more recent, has confirmed so far the safety and regularity of flying.

With lowered fares the demand will be far greater, for confidence in the safety of aerial transport is now instilled into the public mind. So that it is certain that, given easy access to passenger-carrying aeroplanes and fares which are within the reach of those who are less than millionaires, there can be a boom in Civil Aerial Transport at once. The doubtful factor is whether British manufacturers of aeroplanes and engines and organisers of aerial transport have the capital—and the pluck—to lower their prices so as to make more money.

A Clear View at Last.

Thus one sees at last a clear view of how we shall come to use aeroplanes as ordinary transport vehicles. Instead of travelling from London to Liverpool in an uncomfortably packed and slow train, or crawling in a car through a mephitic crowd of automobiles, we shall take a taxi to the Temple Steps, board an amphibian, get off the river as may best suit the wind, and alight in an hour and a half, or at most two hours, on the Mersey, within five minutes of Dale Street.

In the journey to Dublin or Paris we shall have still greater advantages, for we shall eliminate all the discomfort and worry of the steamboat journey, and shall



The Hamburg-Amerika liner "Bodensee" over Berlin. The airship, which is 395 ft. long, has accommodation for 50 passengers.

alight on the Liffey or on the Seine for the first time after leaving the Thames. And because our machine is amphibious we shall fly straight overland, knowing that in case of engine failure we can land safely on any open piece of ground.

Railway strikes, State deteriorated railways, crowded roads, bad surfaces—all the annoyances of terrestrial travel will not matter. For, as Colonel John Porte said a few days ago, when holding forth on this same subject, "There is plenty of room top-sides."—C. G. G.

ON FALSE ECONOMIES.

In their time His Majesty's varied Flying Services and the powers that from time to time have ruled over them have done many things. They have done the right thing in the wrong way, and the wrong thing in the right way. They have committed indiscretions on so grand a scale as to have scored veritable triumphs, and they have done the obviously right thing in so hole-and-corner a style as to have nearly rent asunder the Empire.

They have conducted themselves in such manner that they have at one and the same time incurred the considered disapproval of the "Times" and The Aeroplane, the "Daily Herald" and the "Morning Post."

They have combined into one body those two incongruous elements, the R.N.A.S. and the R.F.C., in so wondrous a medley that the members of the composite body disapprove of themselves even more cordially than they ever detested that one of the original elements to which they did not belong.

With so vast a field of achievement to pick from, it is scarcely surprising that there should be some things of real value to be found within the R.A.F.

Homes of Excellence.

Amongst these without doubt should be classed the two testing stations at Grain and Martlesham.

Both these establishments had their origin prior to the All Fools' Day fusion. That they have not been reduced since to inutility and inefficiency may be ascribed to the fact that they are both of them located in rather inaccessible and not particularly fashionable neighbourhoods, and that both of them have had plenty of quite hard work to do. They have therefore attracted only such officers as were keenly interested in their work, and have escaped from that devastating influx of brass-bound promotion-hunters in search of a quiet life who have so seriously compromised the reputation of most of the technical branches of the Air Services.

Under the control of a series of extremely able and competent commanding officers, these two stations have quietly and unostentatiously carried on the development of reliable methods of testing the performances of all kinds of aircraft, and they have done this in a way which has gained for them the confidence of all aeroplane manufacturers who have had to deal with them, despite the R.A.F.-engendered distrust of all official tests against which they had to make headway.

The Industry's Confidence.

The designer of a new type of aircraft knows now that, if his machine is sent to either of these establishments for test it will be flown by capable and unbiased pilots, that every precaution will be taken to secure the most accurate possible measurements of its performance, and that its general suitability for its intended purpose will be reported upon by men who know their business and have no interest beyond a wish to help in the improvement of the aeroplane breed.

The services rendered to the British Air Forces and to the British Aircraft Industry by Grain and by Martlesham far exceed those of all the rest of the technical branches of the Service put together, with the N.P.L., the Advisory Committee on Aeronautics, and the Royal Aircraft Establishment thrown in.

It is therefore not surprising that the "Times"-impelled economy campaigners have settled upon these really useful stations as a fit field for their operations, and that it has been definitely decided to shut down Martlesham Heath for the whole of the next winter. A valiant effort is being made by the responsible and competent ones who remain in the Technical Department to save Grain from the same fate, but there is every likelihood that this effort will fail.

Where Economy Operates.

It is gathered that by closing down Martlesham and leaving it under a guard of 50 men, some 200 rank and file of the Air Force will be released for the more essential duties of releasing W.R.A.F. cooks, clerks, and mess waitresses, and that roughly an equal saving can be made from Grain.

In order to secure this, it is proposed to deprive the R.A.F. and the British Aircraft Industry of the excellent testing organisations which have been built up at these two establishments.

True, it is proposed to close them only for the winter, but to anyone acquainted with the manners and customs of the Air Ministry it will be obvious that, having once dispersed the trained staffs now employed at these stations, it is in the highest degree improbable that they will ever be re-collected and put to their right work again, and with unexperienced officers and untrained men such an establishment will not be likely to return to decent working order until it is again time to shut down for the winter.

The Benefits of Publicity.

The matter is of the very highest importance, both to the R.A.F. and to the Aircraft Industry in general. Neither Grain nor Martlesham Heath have ever possessed a publicity department, such as that unblushingly run by the members of the Royal Aircraft Establishment, and therefore the general public have never even heard of them, and they present an easy mark for our economy-mongers.

But if the Air Force and the Aircraft Industry of the country are to survive, it is absolutely essential that properly organised full-size aeroplane laboratories should be maintained. If it needs the whole 2,000 officers and the 25,000 men to which the R.A.F. is to be reduced to staff them, they should be kept going.

It is possible to improvise an Air Force in case of emergency if the material is available. The material can only be available if full-size research work is carried on continuously and uninterruptedly, and if the manufacturer is continuously encouraged to improve his product.

The Need for Knowledge.

All the camouflaged soldier amateur aviators in the country—excellent fighting pilots though some of them are—will be precious little use to the country in the next Great War if the Aeroplane Industry is dead.

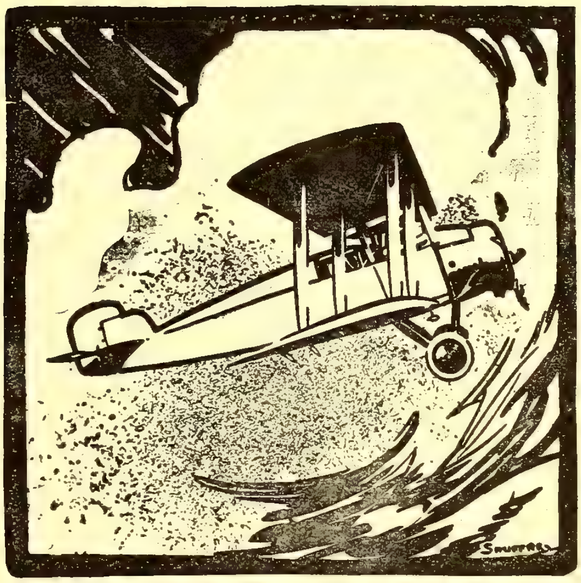
It is therefore up to the still surviving aircraft manufacturers of this country to take this matter up. If this policy is persisted in, it will be no long time before privately designed aircraft are again handed over to the Royal Aircraft Establishment for test and report, with consequences not really difficult to foresee.

If, in spite of all protests, the Air Ministry persist in this—the most stupid of their errors—it would be well worth the S.B.A.C.'s while to attempt to buy up Martlesham Heath as a going concern, offer to its staff decent living wages, and run it for the benefit of the Industry.

It would not be very long before they could realise quite a handsome profit on the fees for testing Government aircraft.—W. H. S.

CIVIL FLYING

WITH



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AN HISTORIC EVENT.

An event of the foremost importance in the history of aviation is recorded in the French section of Commercial Aeronautics this week. It is there stated the MM. Gastambide and Levavasseur have obtained successful experimental flights with a variable surface aeroplane of the latter's design. To the present generation of pilots these names mean nothing, so it may be well to explain that the father of M. Gastambide in partnership with M. Mengin financed and built a monoplane in 1908, which monoplane and its engine were designed by M. Levavasseur, who at that early date had produced an aero-engine (originally designed for racing motor-boats), which weighed only 5 lb. per horse-power.

This engine, which was of the "Vee" type, was called the Antoinette, after the daughter of M. Gastambide, and it embodied most of the outstanding features of the best modern aero-engine practice, besides others which may yet return to use. The original Gastambide-Mengin monoplane became in 1909 the famous Antoinette monoplane, and it remains to this day the most graceful flying-machine ever built. Also, it was, in spite of its early date, so efficient as to compare favourably with many highly reputable machines of to-day.

The Antoinette failed to survive because of errors in detail design and because of the peculiar system of control adopted, but aero-dynamically and æsthetically it was seven or eight years in front of its time. *Père* Levavasseur retired from aviation and nothing has been heard of him in the world of aeronautics since 1912. His return, in company with M. Gastambide Junior, may be taken as signifying that in the intervening years he has studied the progress of aeronautical science and feels himself competent to solve the problem of variable surface, which problem is one of the chiefest factors in the future of commercial aeronautics. It would be the highest poetic justice if it should prove that the great engineer and pioneer Levavasseur has solved that problem and has fulfilled the promise given in earlier days —C. G. G.

THE R.A.F. RECORDS MYSTERY.

The following letter has been received with reference to the mysterious disappearance of the pre-war Records of the "First Four Squadrons" :—

Sir,—May I have your permission to bring before your readers a matter of national importance? I am engaged in preparing, from official material, a history of the War in the Air. When our Army took the field in August, 1914, it was assisted by Numbers 2, 3, 4, and 5 Squadrons of the Royal Flying Corps. The value of the help given by these squadrons cannot easily be over-estimated; indeed, but for the information they supplied the Germans might possibly have succeeded in surrounding and destroying the whole of our Expeditionary Force.

The Royal Flying Corps were thoroughly trained for their work. From the date of the formation of the Corps, in May, 1912, down to the outbreak of war, they had been engaged in preparing themselves, by constant exercise and manœuvre, for just such a task as fell to them. Their numbers were small, but they were perhaps the most efficient and best-trained Air Force in Europe. The training was carried out at the centres—Farnborough, Netheravon, and Montrose—where the squadrons were stationed, and a record of the work done was entered by the commanding officers in the Squadron Record Books.

These record books have all disappeared. When the War broke out the commanding officers were ordered to forward their record books to the Royal Flying Corps Headquarters at South Farnborough, and this was done. Then year followed year; the Flying Corps, as everyone knows, developed at an enormous rate; the Royal Aircraft Factory at South Farnborough grew out of all recognition; and in the growth and change of the time the record books, packed in Renault or Gnome engine boxes, were shifted from place to place at South Farnborough.

When a man is fighting for his life he has not time to spend on the relics of his infancy. Nevertheless, the record books were preserved, and when the Royal Air Force was formed, late on in the war, they were dispatched from South Farnborough to the depot that was being formed at Blandford. There is evidence of their dispatch, but direct first-hand evidence of their receipt is lacking, and they have not been found at Blandford.

The Royal Air Force is now rapidly being demobilised, but among past or present members of the force someone who reads this letter may remember seeing the record books and may have something to tell. Any clue to their whereabouts would be more than welcome at the Historical Branch of the Royal Air Force, 2, Cavendish Square, London, W.1. Their importance is great. They were written by men whose names are now widely known, and whose early work did much to win for us our dominant position in the air.

(Signed) Walter Raleigh.

[It is hoped that everybody who can throw any light on the mystery will communicate with Sir Walter.—Ed.]

AN UNKIND FATE.

The railway strike has been unkind to others than those who were merely discommoded by the difficulties of transport. It will be remembered that last week the Committee of the Royal Aero Club postponed the Schneider Cup Consolation Race—officially known as the "Royal Aero Club Seaplane Competition"—on account of the railway strike, apparently assuming—as did most people—that the strike was going to last until the end of the month, and so would save the Committee all the trouble of having to organise a competition. One can picture to oneself the Committee sitting back and folding its hands and saying "Thank Heaven! That saves us a lot of trouble, because nobody will expect us to hold a competition in November or December."

Fate, however, seems resolved to be unkind to the Committee, for no sooner was the postponement announced than a wire arrived from Italy entering a Savoia seaplane for the new race. One is not aware whether it is the identical Savoia which did so well in the Bournemouth fiasco, but, seeing that the same company has entered for the Royal Aero Club Seaplane Competition, the Committee is now in the unpleasant position of leaving foreigners to assume that the British seaplanes are afraid to meet the Italian again under more favourable conditions.

If Fate had been more kind the Committee could safely have resumed once more its habitual attitude of a dormouse; but the Italian entry must at least disturb its dreams.

CONGENIAL WORK.

The Committee of the Royal Aero Club states that "there has been a widespread expression of opinion that the first direct Transatlantic Flight by Sir John Alcock and Sir Arthur Brown on a Vickers' Vimy Rolls biplane on June 14th-15th, 1919, should be permanently recorded in the Club House," and has opened a subscription list with the object of paying for "portraits in oils" which Sir John Lavery has consented to paint "at a purely nominal figure."

One would like to point out to the Committee—which appears to include several educated men—that the first direct trans-Atlantic flight was made by Captain John Alcock, D.S.C., and Lieutenant Arthur Brown, and that these officers did not become Knights till some time after their feat. Also one would like to indicate that the flight in question was the first direct flight in history, and not merely the first on "June 14th-15th," nor the first on a "Vickers' Vimy Rolls Biplane." Furthermore, the Committee might note that "trans" is merely an adverb and not the name of a place.

However, doubtless, as in the case of the Schneider Cup fiasco, the Committee meant well, and one wishes the subscription success. Doubtless ordering "portraits in oils" is more congenial work than labouring to promote the sport of aviation.—C. G. G.

THE TANK INQUIRY.

Lieut.-Comdr. Harold Perrin, late R.N.V.R., Secretary of the Royal Aero Club, and Lieut.-Comdr. Barry, late R.N.V.R., desire it to be known that they have never put in a claim for reward in regard to the invention of the Tanks. They were called as Crown witnesses, and that is their only connection with the affair.

WANTED—A SECRETARY.

The Council of the Royal Aeronautical Society invite applications from members of the Society for the post of Secretary, which will shortly become vacant.

Applications should reach the Secretary at 7 Albemarle Street, W.1., before October 31st, 1919.

Applicants should state their War Service, Membership Grade, Secretarial and Technical Qualifications, and the rate of pay required.

ROYAL AERO CLUB NOTICES.

COUPE HENRY DEUTSCH DE LA MEURTHE.—Organised by the Aero Club de France under the Regulations of the Fédération Aéronautique Internationale and the Commission Sportive Aéronautique of France.

The Cup is an objet d'art of the value of 10,000 francs, with prizes of 20,000 francs each, to be awarded to the first three holders of the Cup.

1st Holder: Emmanuel Helen, May 1st, 1912. Distance: 200 kilos. Time: 1 hr. 30 min.

2nd Holder: Eugene Gilbert, October 27th, 1913. Distance: 200 kilos. Time: 1 hr. 13 min. 25 sec.

The third prize of 20,000 francs is now open for competition.

It is a speed contest in a closed circuit of about 200 kilometres, embracing Terrasse de St. Germain, Senlis, Meaux, Melun, Terrasse de St. Germain.

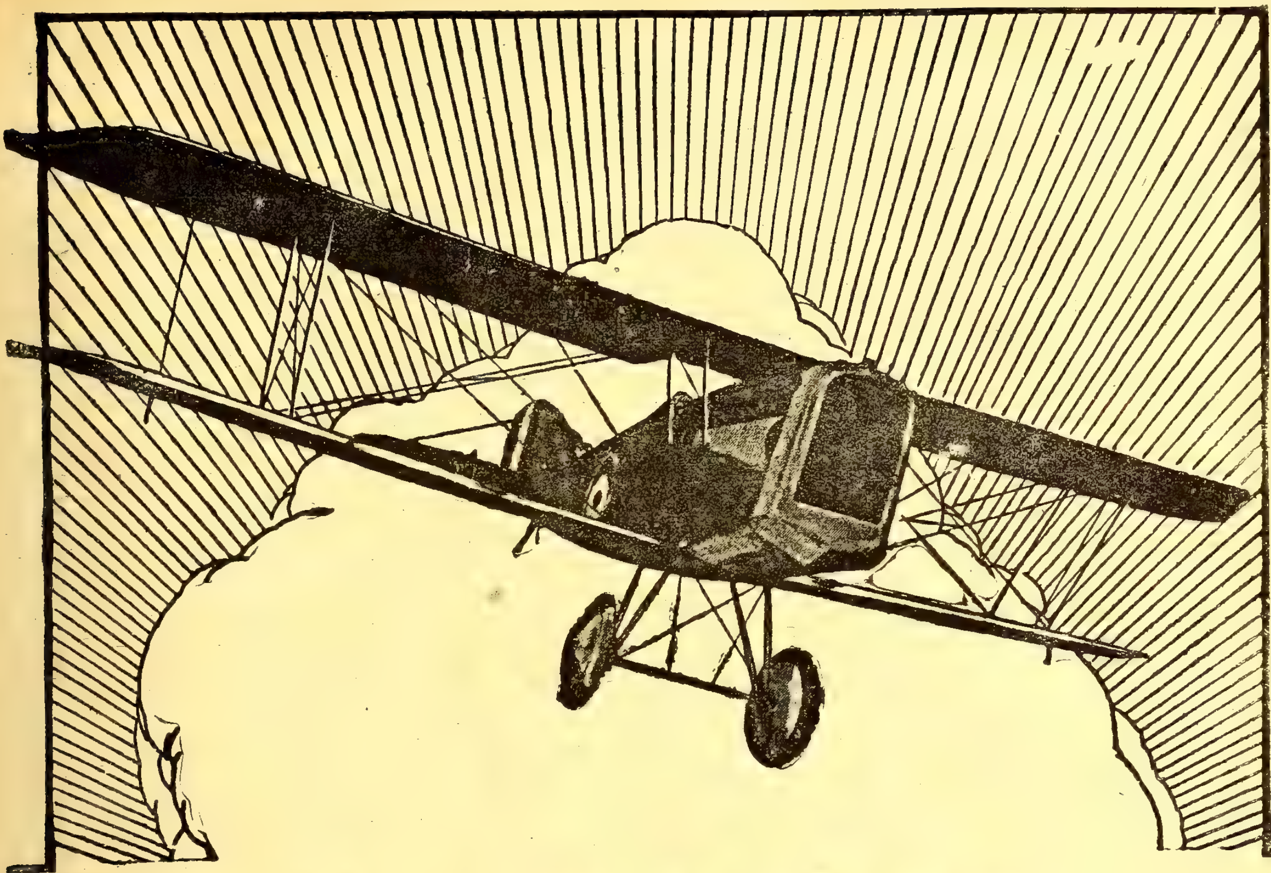
On September 2nd last, Sadi Lecointe completed the course in 48 min. 8 sec., giving an average speed of 249 kilos. 307 m. per hour.

If this speed is not beaten by one tenth within one year Sadi Lecointe will be the winner of the third prize of 20,000 francs and the final holder of the Trophy.

Particulars of the Competition can be obtained from the Royal Aero Club.

FEDERATION AERONAUTIQUE INTERNATIONALE CONFERENCE.—The Conference of the Fédération Aéronautique Internationale will be held at Brussels on the 22nd, 23rd, and 24th October, 1919.

The following delegates will represent the Royal Aero Club:—Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie, Lieut.-Col. Mervyn O'Gorman, C.B., Mr. Harold E. Perrin (Secretary).



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SPECIFICATIONS WILL INCLUDE

285 H.P. ROLLS-ROYCE FALCON ENGINE, or
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APPROXIMATE PRICE £2,500.

Note.—All above Types can be fitted with interchangeable land undercarriage or seafloats.
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NAVAL & MILITARY AERONAUTICS

[The "Official Gazette" notices will be found on p. 1412].

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

Buckingham Palace, Oct. 11th.

Major-General Sir Frederick Sykes (Controller-General of Civil Aviation) had the honour of being received by His Majesty, when the King invested him with the Insignia of a Knight Grand Cross of the Most Excellent Order of the British Empire (Military Division).

Lieut.-Colonel Robin Grey, Royal Air Force, also had the honour of being received by His Majesty, when the King invested him with the Insignia of a Companion of the Distinguished Service Order.

NAVAL.

Admiralty Appointments.

The following appointments have been made:—

Oct. 7th.—Paymr. Comdr.—W. D. Sarratt, to "Vindictive" (temp.), Oct. 6th.

Oct. 8th.—Lieut. (Retd.).—S. D. A. Grey, D.S.O., to rank of Lieut.-Comdr. (retd.), seny. Oct. 1st.

Admiralty Communique.

The following is extracted from a communiqué from the Senior Naval Officer in the Baltic, Rear-Admiral Sir Walter Cowan, R.N., issued on Oct. 10th, dealing with the attack upon Kronstadt Harbour by C.M.Bs. and aircraft which took place on the night of Aug. 17th-18th. This attack was undertaken as a cover to our mine-sweeping operations, which were being undertaken with the ultimate object of sending food-ships to Kronstadt and Petrograd:—

"The position of the ships in the harbour had been ascertained by aerial photographs, and the attacks on them rehearsed in detail by the boats against our ships. Aircraft were to co-operate, and it was planned that they should arrive and bomb the harbour just before the C.M.Bs.' engines could be heard. This time-table was most accurately carried out."

The following narrative of the part played by the aircraft has been compiled from reports received by the Admiralty from officers concerned:—

"Eight aircraft took part in the operation. The intention was that the aircraft should attract all attention in Kronstadt, so that the C.M.Bs. should be neither heard nor seen to approach the harbour; and with that end in view the bombing attack was timed to commence five minutes before the C.M.Bs. reached the line of forts to the northward of Kronstadt, and further, to continue until the boats reached the harbour entrance.

"The machines were detailed (a) to attack the flotilla leader anchored in the entrance to the harbour; (b) to attack guns' crews on the breakwater and searchlights; (c) to stand by to attack the line of forts and cover the retreat of the C.M.Bs. All the machines had orders to draw anti-aircraft fire.

"It is concluded that the presence of aircraft in this operation diverted the enemy's attention from surface craft, as until the boats reached the entrance to the Middle Harbour. all firing was anti-aircraft, and no searchlights were trained on the water. Even afterwards searchlights were trained on the sky and several batteries continued high-angle firing."

MILITARY.

A Tribute to Major-General E. B. Ashmore, C.B., C.M.G., M.V.O.

In the "London Gazette" of Sept. 26th it is announced that Major-General Ashmore, is placed on the half-pay list of the Royal Artillery. He has, however, not yet relinquished his appointment as G.O.C. L.A D.A. The following graceful tribute to L.A.D.A. and General Ashmore is taken from the "Daily Express" of October 8th:—

"L.A D.A.

"So Colonel E. B. Ashmore—such being the substantive rank of Major-General Ashmore, lately commanding the London Air Defences—has been placed on half-pay. Thus passes, presumably in its war-time form, at all events, the exceedingly efficient organisation known shortly as Lada, which made it so hot for the Hun that he never tried to raid London after his disasters on Whit Sunday, 1918, though he made afterwards nineteen raids on Paris.

"The Mind of the Barrage.

"General Ashmore came over from France to take charge of our A.A. defences in the late summer of 1917, and to his combination of qualities as airman, gunner, and general officer belongs the chief credit for a very remarkable success. It was after his coming that the gun barrage became a scientific instrument of defence, and the night-flying squadrons owed much to his sympathetic enthusiasm. London owes him a debt that should not be forgotten now that the maroons are silent.

"Most who knew him and all who did not called him 'Splash' Ashmore. At an inspection he was the fiercest general who ever walked between the ranks of a gun detachment, and he had an intolerance of fools and junior officers which may sometimes have failed to tolerate wisdom. In mess he had the most charming smile and a suave courtesy which was no concealment for a very active and brilliant mind. He won many honours overseas and at home, and deserved them all. The A.A. gunners whom he commanded at home have no honours, not even one medal ribbon. Do they deserve one? General Ashmore could tell us."

Lieut.-Col. Robin Grey, D.S.O.

It may be called to mind by those who have been connected with aviation since pre- and early war days that Lieut.-Col. Robin Grey, Grenadier Guards and R.A.F., whose name appears in the Court Circular of Oct. 11th, was taken prisoner by the Germans in 1914. Capt. Grey—as he was then—was one of the first British prisoners of war to be sent to Karlsruhe for what was called by the British Press "retaliatory treatment." It was alleged that this was to be a deterrent to the Allied air raids upon the "open" Rhine cities, but, in fact, Karlsruhe was merely a clearing-house for prisoners whose camps were being changed.

AIR FORCE.

The King's Certificate.

The Air Ministry announced on Oct. 7th that His Majesty the King has been pleased to approve of the issue of a Certificate to Officers who have relinquished their commissions during the War under the following circumstances.

A.—Having served in a sea-going Ship of War at Sea, or abroad in a theatre of operations, since August 4th, 1914, and who have been invalided on account of ill-health or wounds, not due to misconduct, and where such is or are certified under the authority of the Air Council to be caused or aggravated by service

B.—Having been invalided on account of ill-health or wounds certified under the authority of the Air Council to have been caused or aggravated by service while engaged on flying duty at Home in connection with operations against the enemy, or aerial coastal patrol work, since August 4th, 1914.

C.—Having been invalided on account of disablement certified under the authority of the Air Council to be directly attributable to the action of the enemy, e.g., Air Raids or Naval Raids.

The certificates for officers of the R.F.C. who relinquished their commissions prior to April 1st, 1918, will be issued under the regulations laid down in Army Order 138 of 1918. The certificates for Officers of the R.N.A.S. who relinquished their commissions prior to April 1st, 1918, will be issued by the Admiralty.

His Majesty the King has further approved of the award of a special distinctive certificate to be entitled the King's Second Certificate, to officers who, after having become eligible for the award of the King's Certificate voluntarily served again, and again relinquished their commissions during the War, under the circumstances detailed in Paragraph 1 of this Order.

Applications from Officers who have already left the Service, and who are entitled to these Certificates should be addressed to:—

The Secretary, Air Ministry (P.4.E.), Kingsway, London,
W.C.2.

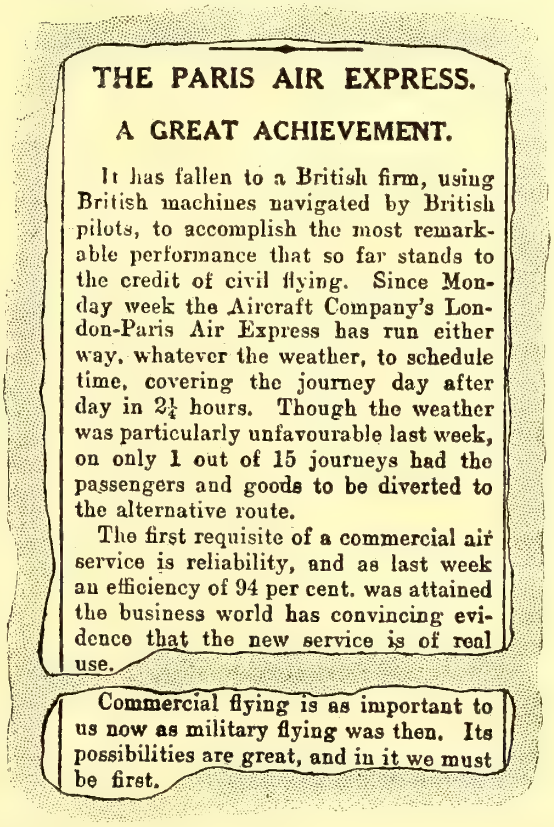
Applicants must state:—(a) Full name and rank. (b) The grounds upon which the Certificate is claimed. (c) Details of service for which it is claimed, including the Branch or Arm of H.M. Service in which the applicant was serving at the time. (d) Date of relinquishment of Commission. (e) Whether a Certificate has already been applied for or been granted, in respect of service in the ranks, etc.

ROLLS-ROYCE

THE ENGINES WHICH MADE THE FIRST DIRECT FLIGHT ACROSS THE ATLANTIC.

The future of flying depends on trustworthiness.

Extracts from the "Daily Mail" (leading article), September 2, 1919 :—



THE PARIS AIR EXPRESS.

A GREAT ACHIEVEMENT.

It has fallen to a British firm, using British machines navigated by British pilots, to accomplish the most remarkable performance that so far stands to the credit of civil flying. Since Monday week the Aircraft Company's London-Paris Air Express has run either way, whatever the weather, to schedule time, covering the journey day after day in 2¼ hours. Though the weather was particularly unfavourable last week, on only 1 out of 15 journeys had the passengers and goods to be diverted to the alternative route.

The first requisite of a commercial air service is reliability, and as last week an efficiency of 94 per cent. was attained the business world has convincing evidence that the new service is of real use.

Commercial flying is as important to us now as military flying was then. Its possibilities are great, and in it we must be first.

We are exhibiting at Olympia, November 7-15, 1919. Stand No. 74

ROLLS-ROYCE ENGINES

ARE USED FOR THE PARIS AIR EXPRESS

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THE R.A.F. CADET COLLEGE

The following was issued on Oct. 8th :—

The Air Ministry has just issued a small booklet containing the regulations for the Royal Air Force Cadet College. It is obtainable from H.M. Stationery Office or their agents and from any bookstall at 3d.

The R.A.F. Cadet College has been instituted for the purpose of affording special education to candidates for Commissions in the R.A.F., and is intended exclusively for those who desire to make the R.A.F. their permanent profession in life.

The limits of age for admission to the College will be from 17½ to 19 years, with the exception of those who have served or are serving in the Forces, and are recommended by their C.O. for a permanent commission in the R.A.F., in which case the upper age limit will be 21. All applications for the printed form of application for admission to the examination should be made to the Secretary, Civil Service Commission, Burlington Gardens, London, W.1.

The booklet sets forth in detail the subjects for examination and possible marks. The subjects for the entrance examination which are obligatory are English, English History and Geography, elementary Mathematics, and one modern language. The optional subjects are Latin, Greek, another modern language, Mathematics (elementary, intermediate and higher), Science and elementary Engineering. All the obligatory subjects must be taken, but not more than three of the optional class may be taken, and candidates will be expected to qualify (to obtain not less than 33 per cent. of the total marks allotted) in each of the four obligatory subjects. Candidates will receive extra marks if they hold Certificate A from the O.T.C., or if they have served in the senior division of the O.T.C., or if they have completed four months' continuous service as Officers, Warrant Officers, or Non-Commissioned Officers and men in the Services. A certificate to this effect must be furnished on a form supplied to applicants by the Civil Service Commissioners.

A certain number of prize Cadetships will be awarded to successful competitors in order of merit at such examination, carrying certain emoluments and financial benefits. These are designed to give assistance to those who stand in need of the emoluments attached to them. Each candidate for Cadetship will be examined by a Medical Board.

There will also be a King's Cadet appointed by the Secretary of State for Air and Honorary King's Cadets nominated by the Secretary of State for Air, and a limited number of Cadetships will occasionally be filled by suitable candidates specially nominated by the Air Council, such recommendation being submitted by the candidate's headmaster.

The course of studies at the R.A.F. College during the first year will include :—

> English literature and language; the British Empire; practical mathematics, including mechanics and draughtsmanship; general elementary science; history of the R.A.F.; outline of Army and Navy organisation and characteristics of the various arms and types of ships; map reading; R A.F. law and administration; drill (with rifles) and physical training; hygiene and sanitation; practical work in the workshops: the Morse code; passenger-flying with instruction in map reading, and use of compass and machine-gun.

During the second year the course will be :—

> Theoretical and practical instruction in engines, including magnetos and their management; theory of flight; practical rigging; advanced work in wood and metal workshops; wireless telegraphy and telephony; machine and Lewis gun; instruction in aviation.

The terms of payment are under consideration and will be issued shortly. They will correspond generally with those at the Royal Military Academy and Royal Military College, excepting that the R.A.F. Cadets will draw pay at 5s. a day during their first year's course, and 10s. a day during their second year's course. Other details concerning the syllabus of instruction at the College, government and organisation, discipline, etc., will be found in the booklet.

EXTRA LEAVE FOR OFFICERS AND MEN OF THE ROYAL AIR FORCE.

The Air Ministry announced on Oct. 7th that officers and other ranks of the Royal Air Force who were on leave in the United Kingdom on Sept. 27th will be considered to have their leave cancelled with effect from that date and will be entitled as from Oct. 8th (inclusive) to the remaining portion of their leave plus seven extra days.

These officers and airmen, who volunteered their services and were employed on duty in connection with the railway strike, but who were not on leave on Sept. 27th, will, on completion of this duty :—

(1) If on the home establishment, return to their units and then receive seven days' pay.

(2) If from France, Flanders, or the Rhine, report to the O.C., R.A.F., Manston, near Ramsgate, who will then grant them seven days' leave pending return to their units.

Vouchers will be given for these leave journeys.

DISBANDMENT OF THE W.RA.F.

The Air Ministry announced on Oct. 7th :—An Order has been issued for the final disbandment of the Women's Royal Air Force, which has already been reduced to small proportions through rapid demobilisation during the past few months.

The new Order that demobilisation of the large majority of officers and other ranks will be completed by November 8th. A small number will be temporarily retained for the purpose of closing records and winding up the affairs of the Force, and other special duties.

The Air Council has also issued the following special order :

"The Air Council desire to express their appreciation of the good work done by the Force both during and after the period of hostilities.

"In spite of much difficulty and in fact of hostile and unjust criticism, the W.R.A.F. has left a record of which they can feel well proud. During hostilities the good work they accomplished went far towards enabling the R.A.F. to reach the dominating position in the air which had such a direct influence in the achievement of the final victory.

"Subsequent to the Armistice, when it was necessary to disperse a large portion of the Airmen to civil life, it was the W.R.A.F. who made it possible for the R.A.F. to meet the demands made upon it and maintained the services at the aerodromes until new male personnel could be enrolled.

"The necessity for the demobilisation of the W.R.A.F. is now imperative, but in returning to civil life, Commandant Dame Helen Gwynne-Vaughan, D.B.E., Officers and Members may feel assured that they carry with them the good wishes of the Air Council and a debt of gratitude from the nation."

FRANCE.

GENERAL HIRSCHAUER AND THE SENATE.

General Hirschauer, formerly Director of Military Aeronautics, has announced his intention of contesting the senatorial election in the Lower Rhine.

THE PARIS-CAIRO-PARIS FLIGHTS.

The details of the flights from Paris to Cairo and back made by Commandant Vuillemin and Lieut. Dagnaux are as follows :—These officers made the flight on Bréguet biplanes (300-h.p. Renault engines). Commandant Vuillemin and his mechanic, Binet, succeeded in completing the course, but Lieut. Dagnaux had an accident on the return journey at Beyrout and had to finish the voyage by ship.

The distances and dates of the stages of Commandant Vuillemin's flight are as follows :—

Paris-Marseilles (Aug. 11th), 433 miles.

Marseilles-Naples (Aug. 12th), 435 miles in 6 hr. 30 min.

Naples-Salonica (Aug. 13th), 466 miles in 5 hr. 45 min.

Salonica-Constantinople (Aug. 14th), 310 miles in 4 hr.

Constantinople-Cairo (Aug. 16th), 807 miles (372 over the sea) in 8 hr. 30 min.

Cairo-Beyrout (Aug. 26th), 372 miles (310 over the desert) in 5 hr.

Beyrout-Constantinople (Aug. 28th), 621 miles in 8 hr.

Constantinople-Naples and Naples-Istries (Sept. 8th), 745 miles and 496 miles—1,241 miles in 15 hr.

Istries-Paris (Sept. 9th), 391 miles in 4 hr. 30 min.

Commandant Vuillemin is a distinguished officer in the French Army who has served for some years in the aerial arm of the service. He achieved many successes in aerial action against the Germans, as his seventeen citations in dispatches prove. For the last three years of the war he was graded as a *chef d'escadrille*. He is an Officer of the Legion of Honour and a Companion of the Distinguished Service Order and has the Croix de Guerre (with thirteen palms and five stars) and the Order of St. Anne, 3rd Class (Russia).

His energies have not faded since the incitements of war have vanished for a space.

GERMANY.

AN EXODUS OF AEROPLANES.

About 170 of the military aeroplanes which ought to be delivered to Allied Powers under the terms of the Peace Treaty have been conveyed to Holland with almost ostentatious secrecy. Their identification marks were altered and it is possible that many may evade the vigilance of the Allies.

THE TRIAL OF GERMAN AVIATORS.

According to the Chicago "Tribune" on Oct. 7th the Supreme Council of the Allied and Associated Powers met

Official Thanks to Members.

The Home Office
Ministry of Food
Ministry of Transport
Postmaster General

and the

Chief Commissioner of Police

have expressed keen appreciation of the invaluable services rendered by Members of the Automobile Association during the Strike period.——————

The Executive Committee

cordially thank all Members, Agents and Repairers and Friends whose prompt and generous response to the Call enabled the Association to be of such value to the State.

W. JOYNSON-HICKS,
Chairman.
STENSON COOKE,
Secretary.

THE AUTOMOBILE ASSOCIATION AND MOTOR UNION,
Fanum House, London.

in Paris and discussed the advisability of trying the various German officers who are alleged to be guilty of any "violation of the recognised rules of warfare."

It is stated that the British list comprises, among others, certain aeroplane and airship crews who at various times were sufficiently unfortunate as to be ordered to raid London. Apparently, according to this message, it was no "violation of the recognised rules of warfare" to bomb Midland or coastal towns.

SWEDEN.

Lieut. Rödehn, of the Swedish Air Force, who put up a long-distance record recently, was flying at the beginning of the month on an 110 h.p. Albatros and crashed in a wood at Malmslätt, breaking his thigh badly.

RUSSIA.

Official Communiques.

General Denikin

Oct. 6th.—In the region of Fastoff and Izotoff British aviators, flying exceedingly low, dispersed the Red Cavalry.

Esthonian.

Oct. 5th.—Esthonian aviators observed the Bolshevist rearguards hurriedly retiring through Pskoff.

A Newspaper Yarn.

On Oct. 11th it was reported that after a bombardment from aeroplanes Riga was occupied by German troops.

Mr. Arthur E. Mann, writing in the "Daily Express" of the German advance in Russia, says on Oct. 9th that as he was returning from a motor-car journey to the Latvian-Russo-German front at St. Olai on the main road from Riga to Mitau, he witnessed an attack by German aeroplanes which he describes as follows :—

An artillery duel was in progress. After a few moments four German aeroplanes, with the Iron Cross painted on them, came over the lines and began bombing the Lettish gun emplacements and directing the German fire. I retreated to my motor-car and started back.

Suddenly an aeroplane swooped down until it was only about a hundred yards overhead, and put four bursts of machine-gun fire into the road ten yards ahead of my motor-car, which was racing ahead at 50 miles an hour. The German airman would undoubtedly have obtained our range in a moment or two, but, as we came round a bend, a Lettish armoured car with a machine gun opened fire and drove him off.

Aeroplanes under Admiral Koltchak.

It is reported that a number of French aviators have arrived at Krasnoyarsk with their machines. These aviators are to operate with the forces of Admiral Koltchak.

Aeroplanes on the Tsaritsyn.

The "Times" correspondent, writing from Rostoff-on-Don on Sept. 30th, stated that on the Tsaritsyn front, where the Bolshevists continue to attack in force, General Wrangel's inferiority in man-power is compensated by the use of tanks and aeroplanes and the mobility and dash of his cavalry.

U.S.A.

Aircraft in the U.S. Navy.

It was officially announced on Sept. 13th that all U.S. warships are to be equipped with seaplanes. This policy is in connection with that of building a large fleet of airships, and is part of the U.S. Navy's scheme of coastal defence.

A Mexican Apology.

On Sept. 2nd, while flying on border patrol duty along the Rio Grande, Capt. McNabb and Lt. Johnson, U.S. Army, were fired on by a detachment of about twenty-five Mexican soldiers concealed in the brushwood near Santa Isabel Creek. Capt. McNabb, the pilot, was wounded in the head, and the observer had to bring the machine down on American territory. The State Department made a formal protest to the Mexican Foreign Office, which has now expressed regret and promises an exhaustive inquiry into the incident.

Military Training in Aeronautical Engineerigg.

The following piece has been extracted from the "Congressional Record" (the American "Hansard"), for Sept 8th :—

The Bill (S.2733) to provide for the training of officers of the Army in aeronautic engineering and the issue of equipment and materials therefor was considered as in Committee of the Whole.

The Bill had been reported from the Committee on Military Affairs with an amendment, on page 2, line 1, after the word "appropriated," to strike out "and he is authorised to furnish to institutions to which officers are so detailed such equipment and material belonging to the War Department for use in connection with courses in aeronautic engineering as he may deem advisable, subject to such rules for use, compensation for use, accounting, report, and return as he may prescribe," so as to make the Bill read :

Be it enacted, etc., That the Secretary of War be, and he hereby is, authorised to detail such officers of the Army as he may select, not exceeding 25 at any one time, to attend and pursue courses of aeronautic engineering or associate study at such schools, colleges and universities as he may select.

Sec. 2. The Secretary of War is authorised to pay tuition for the officers so detailed and to provide them with necessary textbooks and technical supplies from any moneys available for the Air Service of the Army not otherwise specifically appropriated.

The amendment was agreed to.

The Bill was reported to the Senate as amended, and the amendment was concurred in.

The Bill was ordered to be engrossed for a third reading, read the third time, and passed.

The title was amended so as to read : "A Bill to provide for the training of officers of the Army in aeronautic engineering."

U.S. Army Airships.

Great attention is now being paid to airship training in the U.S. Army, particularly at Langley Field. There is at present only one airship at this station, but two or three more will shortly be commissioned. One of these may be the airship built by the Zodiac Company for the U.S. Navy in wartime. Its dimensions are :—Capacity, 219,000 cubic ft., length 236 ft., width, 49.2 ft., and height, 65.5 ft. Ten or twelve passengers can be carried and the cabin is a bower of luxury in accordance with the latest American taste.

Three officers are required for the proper navigation of this class of airship. One is in charge of the altitude controls and the maintenance of correct pressures in gasbags and ballonets. Another has control of the ship's course, and the third exercises general supervision as commanding officer.

In addition to this ship it is intended to send to Langley Field one or more of the "C" type airships which are used by the American Navy over coastal waters. These are of 175,000 cubic feet and made by the Goodyear Tire and Rubber Company.

A large hangar has been constructed which will house the Zodiac and two or three of the "C" class.

Thirty-two balloon and airship companies are being maintained on a peace establishment in the U.S. Army. Two officers are visiting aeroplane stations to induce volunteers to transfer to the "lighter than air" branch in order to make up the existing deficiency of 800.

Three Mullion type airships and three portable airship hangars bought from the British Navy arrived in the U.S.A. about one month ago.

Organisation of Air Service Units.

The following order is extracted from "Air Service News Letter" dated Sept. 30th, 1919 :—

The following Air Service units will be organised at the stations indicated, under Tables of Organisation, 1919, for the Air Service :—

Units.	Stations.
First Wing	Kelly Field, San Antonio, Tex.
Second Wing	Langley Field, Hampton, Va.
1st Day Bombardment Group	Ellington Field, Houston, Tex.
1st Surveillance Group	Kelly Field, San Antonio, Tex.
1st Pursuit Group	Selfridge Field, Mt. Clemens, Mich.
1st Army Observation Group	Park Field, Millington, Tenn.
1st Photo Section	Fort Bliss, Tex.
2nd Photo Section	Langley Field, Hampton, Va.
4th Photo Section	Langley Field, Hampton, Va.
6th Photo Section	Langley Field, Hampton, Va.
7th Photo Section	Langley Field, Hampton, Va.
11th Photo Section	Langley Field, Hampton, Va.
12th Photo Section	Canal Zone
14th Photo Section	Langley Field, Hampton, Va.
15th Photo Section	Langley Field, Hampton, Va.

The 1st Wing will consist of all groups and organisations engaged on work in connection with border duty. The 2nd Wing will exercise supervision of all units on the Atlantic Coast. The 1st Day Bombardment Group will consist of the 11th Day Bombardment Squadron, 20th Day Bombardment Squadron, 96th Day Bombardment Squadron, and 166th Day Bombardment Squadron. The 1st Surveillance Group will consist of the 8th, 90th, and 104th Surveillance Squadrons. The 1st Pursuit Group will consist of the 27th, 94th, 95th, and 147th Pursuit Squadrons. The 1st Army Observation Group will consist of the 1st, 12th, and 258th Army Observation Squadrons. The squadron organisations of these groups have been previously authorised.

The commanding generals of the Philippine, Hawaiian, and Panama Canal Departments will organise units in their departments as follows :—

Units.	Stations.
1st Observation Group	Philippine Department
2nd Observation Group	Hawaiian Department
3rd Observation Group	Panama Canal Department

The 1st Observation Group will consist of the 2nd and 3rd Observation Squadrons.

Telephone :	Telegrams :
WILLESDEN 2455.	"NIEUSCOUT, CRICKLE, LONDON."

The 2nd Observation Group will consist of the 4th and 6th Observation Squadrons.

The 3rd Observation Group will consist of the 5th and 7th Observation Squadrons.

By order of the Secretary of War :—

PEYTON C. MARCH,
General, Chief of Staff.

AN AMERICAN GRANT.

A Reuter message from Washington states that the Senate Military Committee recommended an appropriation of $15,000,000 on Oct. 10th. This sum of money is for the construction of Army aircraft in connection with the establishment of air routes to Panama, Alaska, and probably Asia.

Early in August of this year the Navy and Army asked Congress for a grant of $129,000,000 for the current year. The grant given was only $50,000,000.

THE DESIGNER OF THE LIBERTY ENGINE.

Mr. J. G. Vincent, vice-president of the engineering section in the Packard Motor Car Co., and one of the many designers of the Liberty motor, has been given a commission as Colonel in the Officers' Reserve Corps in the U.S. Army. His unit is the Aviation Section of the Signal Corps.

On joining the U.S. Army in 1917 he was given a commission as Major, and was later promoted Lt.-Col. He was pressed after the Armistice to accept a commission in the Officers' Reserve Corps as a Major—then the highest rank available for first appointment. Since that time an Enabling Act has made it possible for him to be given a higher rank.

THE TRANSCONTINENTAL AIR RACE.

A great military air race of 5,400 miles from New York to San Francisco and back and vice versa started on Oct. 8th. One of the chief objects of the contest is to arouse the United States Congress to interest itself in the desperate position of American aviation, and to inspire Congress to pass legislation providing funds to develop a distinct Department of Aviation.

Sixty-seven machines were entered for the Westward flight and back, and 16 at San Francisco for the Eastward flight and back. The competition rules stated that all flying was to be done between sunrise and sunset only, and would be suspended on Sunday.

The majority of the machines entered are D.H.4s with 400 h.p. Liberty engines. One of that type is expected to win the race, as, in addition to the number in the contest, spare parts can be obtained for the Liberty engines at any of the 21 stopping places or control stations on the route. An Italian S.V.A. was entered for the race, and said to have a speed of 135 m.p.h. A captured Fokker was also expected to fly.

The course of the race was very severe. The machines started from sea-level, and had to cross the Rocky Mountains at 6,600 ft., where all varieties of weather and temperature were expected.

The first starter from Mineola, New York, was to have been Air Commodore L. E. O. Charlton, Air Attaché at the British Embassy, Washington. He was accompanied by Flying Officer T. Traill, R.A.F. Their machine was a Bristol Fighter, with a 275 h.p. Rolls-Royce engine. They were given the place of honour as an international courtesy.

The Bristol Fighter developed petrol supply trouble at the last moment. This was eventually remedied, and the machine was the eleventh to ascend at 9.34 a.m. Air Commodore Charlton crashed into a fence near Ithaca, New York, at 2.20 p.m., owing to engine failure from carburetter trouble, and so was put out of the race.

Some 48 machines started from Roosevelt Field, Mineola, at intervals of two minutes, the first leaving at 9 a.m. At the same time, 15 aeroplanes left San Francisco for the flight eastward.

Three aviators were killed and six machines crashed on the first day, Oct. 8th. Major D. H. Chrissey, who started from San Francisco, was killed with his observer, when their machine fell near Salt Lake.

Serjeant W. H. Neavitt, the observer in a De Havilland, piloted by Colonel Gerald C. Brant, was also killed when their machine crashed by Deposit, New York. Colonel Brant was badly bruised.

Another machine, piloted by Capt. D. B. Gish, burst into flames in mid-air. He was carrying as a passenger, Capt. Delavergne, the French Air Attaché. Capt. Gish succeeded in landing safely despite the fire, but his machine was destroyed.

Air Commodore Charlton and the French Air Attaché were the only representatives of the Allies in the race. Capt. Delavergne returned to Mineola intending to re-enter the contest in another machine.

Lieut. Belvin Maynard, the winner of the recent New York to Toronto flight, had covered the furthest distance on the night of Oct. 8th. That night he landed at Chicago and was 155 miles ahead of his nearest competitor. He was flying a De Havilland 4 with a Liberty engine, and had not had the slightest trouble en route.

The distance from New York to Chicago is 710 miles. Lieut. Maynard covered the distance at an average speed of 130 miles per hour. None of the aviators who started from San Francisco equalled the distance covered by the leaders in the Western flight on the first day. The machines which flew furthest only reached Salt Lake City, Utah.

On Oct. 9th, Lieut. Maynard left Chicago at 7.10 a.m., and hoped to reach San Francisco on that day at sunset. Rain and high winds were reported from New York to Illinois.

Two further accidents occurred on Oct. 9th. An aeroplane going westwards fell into Lake Erie in the morning. The pilot, Lieut. Hynes, and his observer, were rescued. Another machine was wrecked at Lockport, New York.

In all, nine machines were put out of the race on Oct. 8th.

On Oct. 9th Lieut. Maynard met Capt. Lovell Smith, who was then the leading aviator, flying eastward at North Platte, Nebraska. At that point Lieut. Maynard had 1,210 miles to fly to reach the Pacific, and Capt. Smith had 1,497 miles to reach the Atlantic. After hearty greetings and a brief rest, the pilots flew on, and Lieut. Maynard continued 205 miles to Cheyenne, Wyoming, where he spent the night.

A Reuter message from Chicago stated that he was delayed there by a broken airscrew, but no further confirmation of the report has been received.

Almost every kind of weather was encountered on the route, snow, rain, winds in various strengths, and also ideal flying conditions. One military pilot, Lieut. E. V. Wales, died on Oct. 10th, after crashing into a mountain in a D.H.4 near Saragota, Wyoming, in a blinding snowstorm. His observer escaped with minor injuries.

Lieut. Maynard reached San Francisco at 4.12 p.m. (New York time) on Oct. 11th, and completed the flight one way across the Continent. His time is given unofficially as 75 hrs. 47 min., and his actual flying time is esitmated at 24 hrs. 58 min. 55½ sec. Lieut. Maynard's flight was made with clockwork regularity and without any exciting incident.

The rules of the race require a stay at the halfway furthest point of the flight for two days before starting on the return journey, and also that no flying shall take place on Sunday. Lieut. Maynard hoped to beat his competitors by including Sunday as one of the two days he is required to stay in San Francisco.

But two other competitors completed half their journeys on the Saturday by arriving at New York practically simultaneously at 6.35 p.m. They are Major C. Spatz and Lieut. E. C. Kiel, whose total times respectively are given unofficially as 83 hrs. 41 min. and 83 hrs. 44 min.

Major Spatz stated that he crossed the Rocky Mountains at 12,000 ft. It was so cold that he feared that the carburetter would freeze. At other times dense snowstorms prevented him from seeing more than 50 ft. ahead, and he narrowly escaped dashing into the side of a mountain.

All the machines which finished half the course on Oct. 11th were flying D.H.4 biplanes, fitted with 400 h.p. Liberty engines. One control station at Green River, Wyoming, had to be cut out of the course, because heavy snows made landing there dangerous. One S.E.5 was included among the 43 other competitors scattered along the course.

Capt. L. H. Smith, the fourth aviator to complete the Transcontinental flight, reached Mineola from San Francisco on Oct. 13th. According to the Exchange Telegraph Co. the actual time taken by Capt. Smith was 24½ hours, nearly half an hour faster than that of Lieut. Maynard. Capt. Smith lost his airscrew just before reaching Cleveland, and thus lost the lead of the eastward bound competitors.

Major Spatz has announced that if he can obtain the permission of the War Department he will abandon the flight back to San Francisco. He wishes to experiment on a Texas flying ground.

A Reuter message from New York on Oct. 12th stated that notwithstanding the fact that Army Air Service authorities at Washington announced that the return flight across the Continent would begin on Oct. 20th, it is now intimated by the American Flying Club that the race may be discontinued, or, if continued, the route may be changed to the southern part of the United States, in order to avoid the severe weather encountered on the northerly route.

THE CHINESE LOAN.

It was announced on Oct. 12th that Vickers, Ltd., are shortly offering for sale the Chinese Government Eight per Cent. Sterling Treasury Notes repayable between 1925 and 1929. Vickers, Ltd., hold these Notes as payment for a number of commercial aeroplanes built by them for the Chinese Government.

MORTGAGES AND CHARGES.

HANDLEY PAGE, LTD.—Satisfaction in full on June 3rd, 1919, of £100,000 debenture, dated Feb. 4th, 1918.

COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

CIVIL AERODROMES.

The Air Ministry made the following announcement on Sept. 27th :—

The following lists of aerodromes are issued as an addition to the lists already published. It will be seen that some of the aerodromes can only be considered as possible emergency landing-grounds. These lists are purely provisional and subject to alteration or amendment from time to time.

LIST D (d).

Aerodromes licensed as suitable for "Avro (504 K) and similar types of aircraft" only. Except in very few instances, accommodation does not exist. The licences have also in the majority of cases been issued for limited periods only.

Aerodrome.	Location of Aerodrome.	Nearest large town.
Blackburn	Finiscliffe Bridge, Blackburn	Blackburn.
Cathcart	Adjoins Kennishead Junction	Glasgow.
Cheltenham	Between villages of Swindon & Uckington	Cheltenham.
North Berwick	Adjoins Railway Station	North Berwick.
Walsall	Millish Rd., nr. Rushall Canal	Walsall.
Wolverhampton	Bridgnorth Road, Perton	Wolverhampton.

LIST E (b).

STATIONS NO LONGER IN USE BY THE R.A.F.

These stations have been passed to the Government Surplus Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing-grounds in the immediate neighbourhood.

Aerodrome.	Nearest Rly. Stations and distance in miles.	Nearest Town and distance in miles.
Beverley	Beverley, N.E.R. (1)	Beverley (1).
Chattis Hill	Stockbridge, L.S.W.R. (2)	Winchester (10).
Doncaster	Doncaster, N.E. and G.N.R. (1½)	Doncaster (1).
Elsham	Barnetby, G.C.R. (2¾)	Barton-on-Humber (6).
Penston	Macmerry, N.B.R. (1)	Haddington (5).

THE CONTINENTAL AIR SERVICES.

A PRIVATE LONDON-PARIS AIR SERVICE.

The honour of being the first firm in Great Britain apart from those directly in the Aircraft Industry to start their own commercial aeroplane service has fallen to S. Instone and Co., Ltd., steamship owners and ship-brokers, etc. As stated in THE AEROPLANE of October 1st, they have bought from the Air Ministry a D.H.4 biplane fitted with a 350-h.p. Rolls-Royce Eagle VIII engine.

The machine was to have made its first crossing to Paris on October 2nd, but it was then not quite ready, and the pilot, Lieut. F. L. Barnard (late R.A.F.), was called up for service during the railway strike.

The original offices of the firm are at Cardiff. In order that the employees there might see it, the machine was flown there recently. On the morning of October 13th, Lieut. Barnard flew it back to Hounslow. S. Instone and Co. state that the journey was completed in 56 minutes. The distance from Cardiff to Hounslow is at least 130 miles. As would be expected, the machine is capable of very considerable speed.

The machine left Hounslow for Le Bourget aerodrome (Paris) at about 12.30 p.m. on the same day (Oct. 13th). Samples and other light goods were carried and also letters from Mr. Stanley Machin, of the London Chamber of Commerce, to the chairman of the British Chamber of Commerce in Paris, and of the French Chamber of Commerce.

If they find that the aeroplane service pays, the company will buy other machines and perhaps start a daily service to Paris. They also hope to connect up by air with their offices in Italy. The one machine will fly from London to Paris whenever it is required, but it can hardly be expected to do the return journey more than three times a week.

THE AIRCO SERVICE.

The service to Paris run by Aircraft Transport and Travel, Ltd., continued during the past week without interruption, although the weather on some of the days was not very favourable for flying. Owing to the demand for the transport, an additional machine was put on the service on four days out of the six on which the service ran.

Seven weeks of continuous flying has now been successfully completed with an approximate mileage of 24,750 miles, 232 hours in the air and at an average speed of 106½ m.p.h.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Oct. 6th	D.H. 4a	Lt. Powell	12.33 p.m.	2 48 p.m.			1
	D.H. 16	Lt. McMullin			12.30 p.m.	2.55 p.m.	4
Oct. 7th	D.H. 4a	Lt. Chattaway	12.38 p m.	3 00 p.m.			1
	D.H. 4a	Lt. Powell			12.30 p.m	2.50 p.m.	1
Oct. 8th	D.H. 16	Lt. McMullin	12 50 p.m.	3 20 p.m.			4
	D.H 4a	Lt. Shaw	12 50 p.m.	3.00 p.m			1
	D.H. 9	Capt. Baylis			12.30 p.m.	2.43 p m.	0
Oct. 9th	D.H. 16	Lt. Powell	12 43 p m.	2.50 p.m.			4
	D.H. 9	Lt. Armstrong	1.00 p m	3 10 p.m.			1
	D.H. 4a	Lt. Chattaway			12.30 p.m.	2.58 p m	0
Oct. 10th	D.H. 16	Capt. Baylis	12.43 p.m.	3 00 p.m.			4
	D.H. 4a	Lt. Shaw			11.00 a.m.	12.55 p.m.	1
	D.H. 16	Lt. McMullin			12.30 p.m.	3.15 p.m.	3
Oct. 11th	D.H. 4a	Lt. Chattaway	1.07 p.m.	3 30 p.m.			2
	D.H. 4a	Lt. Lindley	1.04 p.m.	3.35 p.m.			1
	D H. 16	Lt. Powell			12.30 p.m.	2.50 p.m.	2

The weather conditions during the week were not good over the Channel. On October 6th there was drifting fog; on October 9th there was a 40 m.p.h. wind, and on the next day also there was a strong wind over the Channel.

Prospective passengers are now booking seats as far as a month ahead. The improvements in the organisation now make it possible for passengers to be picked up by motor-car for Hounslow at any point within a mile of Piccadilly Circus.

Going by air there is only one ticket and one vehicle. Irritating delays are avoided. The business man in a hurry saves more than four hours on the journey in actual time. Assuming he only values his time at a few pounds per hour the difference between the twenty guineas fare by air, and that of the ordinary land and sea route is no extravagance : it is a sound business proposition.

THE HANDLEY PAGE SERVICE.

Owing to the policy of Handley Page Transport, Ltd., it is difficult to obtain any information as to their services to Paris and Brussels. But one assumes that they are proceeding as usual.

The Company's latest innovation is the provision of luncheon baskets for passengers. The "basket" is really a carton in which are to be found six sandwiches, and fruit and chocolate. Orders for the baskets, which cost 3s., should be given in advance. Wicker holders for bottles and glasses are to be fixed to the walls of the cabins of their cross-Channel machines.

THE LONDON-AMSTERDAM AIR SERVICE.

On Tuesday, Oct. 7th, the British Aerial Transport Company dispatched a saloon passenger machine, piloted by Mr. Cyril Turner, to Amsterdam, at 12.50 p.m. This machine carried 600 lb. of merchandise and returned from Holland on Friday afternoon, 10th instant, with the full complement of passengers (i.e., four)

On Tuesday morning, Oct. 14th, the British Aerial Transport Company, Limited, dispatched a passenger saloon machine to Amsterdam from Hounslow, piloted by Mr. C Turner. Passengers and merchandise were carried. The return journey will be made from Holland on Thursday.

LONDON.

HOUNSLOW.—On Friday morning, 10th instant, Major C. Draper, D.S.C. (late R.N.A.S.) left Hounslow piloting a saloon passenger machine of the British Aerial Transport Company for Paris. The journey was completed in 2 hours 20 min. This machine was specially chartered, the passengers being Sir Percival Perry, Colonel Warwick Wright, D.S.O., Major Lennard, and Mr. Van den Bergh. It is expected that the party will return to-day (Wednesday, 15th instant).

NORTHOLT.—The Central Aircraft Company did their usual flying during the week ending Oct. 4th. Flights were made, with newspapers as cargo, to several towns on the East Coast. Post Office mails were carried to Bristol. Apart from the flights made over London, passengers were carried to Paris and Amsterdam

BRIGHTON.

On Saturday, 11th inst., the Avro Company organised an aerial carnival at Brighton on a scale not previously witnessed, at least in the South of England. At 10 a.m. eight Avros started from Hounslow in close formation under the command of Major McMinnies and Major A. G. Taylor. The mist was thick in the morning, but they flew comparatively low across country, and at Brighton joined forces with the Avros already there under the charge of Capt. Kennard. The other pilots who took part in the display were Capts. Davis and Le Blanc Smith and Messrs. Park, Sadler, Sullock, Broad, Pitt, Sparks, and Weeks

The Ladies' Mile at Patcham had not proved a very convenient aerodrome, so a much better one had been secured at West Blatchington Farm, which is easily reached by road or rail from both Brighton and Hove. Admission to the ground was free, and a large crowd had collected to witness the performance.

Displays were given on Oct. 11th and 12th by these aviators. Several parachute descents were made by a woman. The crowd showed great interest.

WINDERMERE

The Avro seaplane season has now finished on Lake Windermere. On Oct. 4th Capt. Pixton flew a machine over to Douglas to escort Mr. Moxon back on his land machine. He made two journeys from Windermere to Douglas and also alighted at Blackpool to pick up Mr. Moxon and take him back to fetch the second machine. The weather was perfect except for a thick mist, which made it difficult to find the way.

On Oct. 8th Capt. Pixton called at Blackpool by car and brought Mr. Moxon back from Windermere to fly one of the seaplanes to Blackpool, where it was to be fitted with a land chassis. On arrival at Blackpool it was found to be impossible to fit the land chassis without a lot of alterations, so Mr. Moxon flew the machine back to Windermere the next day, having to take off in a very rough sea.

NEW ZEALAND.

Apropos of the use of aeroplanes for submarine spotting during the war, it has been found that most of the larger species of fish can be easily seen from the air if the bottom of the sea over which they are swimming is suitable in colouring, and if the sea is not choked with seaweed. A good-sized mullet can be seen from an altitude of two or three hundred feet when it is swimming over sand. Smaller fish in shoals are easily visible.

Professor Joubin, of Auckland, proposes the establishment of regular patrols by seaplanes over the fishing grounds. These machines should be equipped with radio-telegraphic apparatus, and would notify the fishermen in the neighbourhood whenever a shoal of fish was "spotted."

The use of seaplanes would result in a great saving of the fishermen's time. It would also ensure a more economical use of expensive bait. One believes that even the British trawl-owners might add a little to their great wealth if they used aircraft for shoal "spotting."

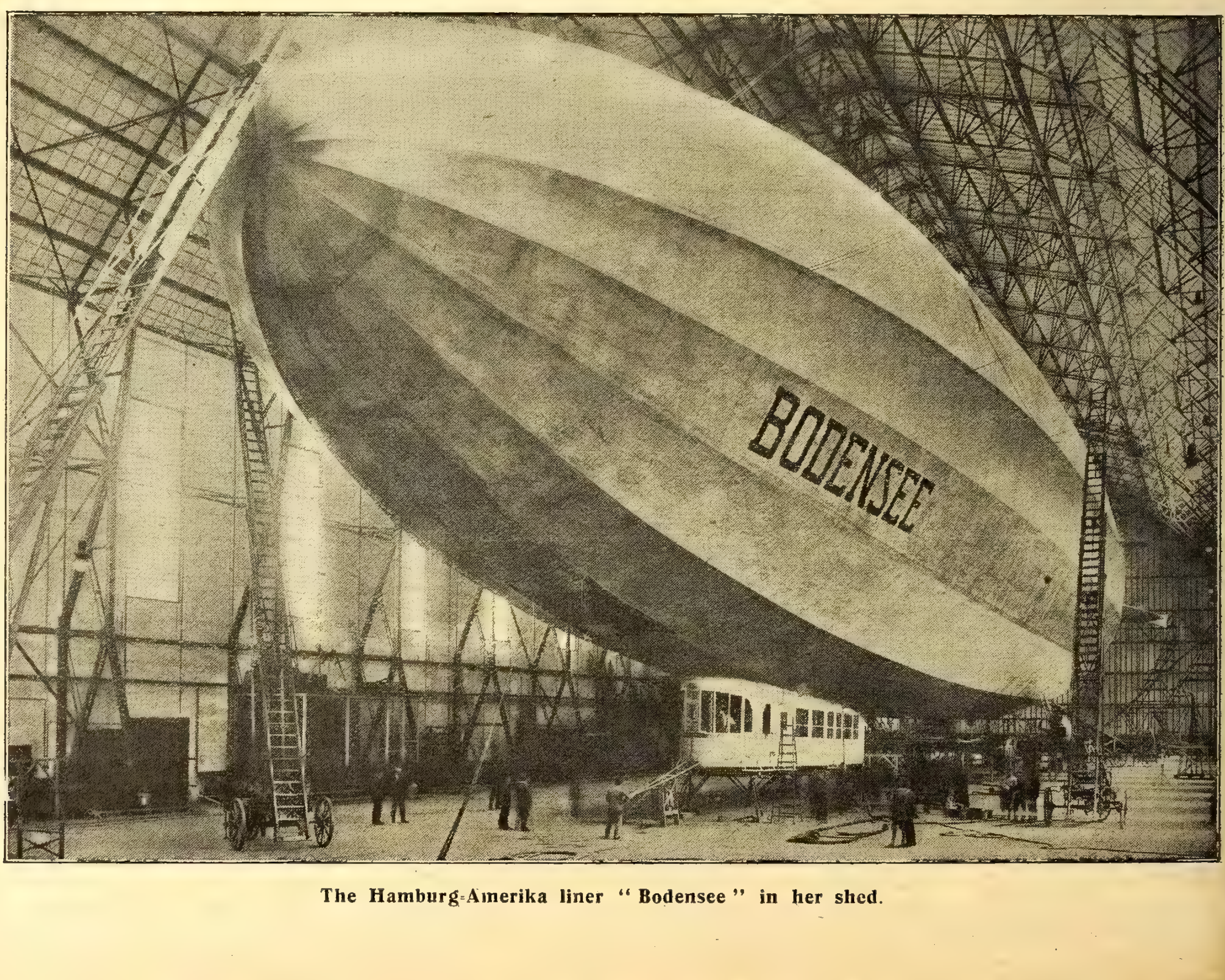
FRANCE.

MM. GASTAMBIDE AND LEVAVASSEUR.

MM. Gastambide and Levavasseur, the former of whom was the original Chairman of the Antoinette Company, and the latter of whom was responsible for the design of the graceful Antoinette monoplane, have now produced an aeroplane with variable surface. Two satisfactory flights have been made, but no details are as yet available.

The world, with historic memories of the Antoinette, superb in its beauty, will welcome M. Levavasseur's return to aeronautics.

(*Continued on page* 1408A.)



The Hamburg-Amerika liner "Bodensee" in her shed.

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AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

The views of a number of aircraft manufacturing firms as to the future prospects of the Aircraft Industry and the policy which they propose to meet their estimate thereof will be found below.

Naturally all agree that there is no prospect of keeping their works fully employed on the construction of aircraft, but with two notable exceptions all the firms which have so far stated their views have sufficient faith in the future of aviation to have decided to keep their connection with the Industry and to carry on with experimental and development work.

This is as it should be, and the Industry will suffer little by the decision of large money-making concerns to close down their aircraft works for the time being as soon as the immediate prospect of profits therefrom vanishes.

Flying-boats originating from the Supermarine Aviation Works at Woolston are illustrated and described in "Modern British Aeroplanes" this week. The medium and small sized flying-boat presents a very interesting problem, and its exact sphere of usefulness is not yet conclusively settled.

The flying-boat in really large sizes has its own field undisputed, but it is still doubtful whether for small sizes the boat type will supplant the float seaplane or *vice-versa,* or whether each type will find its own uses.

In this connection the description of the Oertz flying-boats—the only German machines of the boat type which have persisted through the war—is distinctly interesting.

THE AIRCRAFT INDUSTRY'S VIEWS OF THE FUTURE.

In the present state of affairs the future policy of those firms who have been occupied during the war with the manufacture of aircraft on a large scale cannot fail to be of very great interest to all readers of The Aeroplane.

Letters of inquiry on this subject have been addressed to a number of such firms, and the following replies thereto, together with certain notes as to the firms' past activities, should prove illuminative.

Sir W. G. Armstrong, Whitworth & Co., Ltd.

Armstrong, Whitworth & Co., Ltd., entered the Aircraft Industry before the war in 1913. The A.W. F.K.3 with the 90 h.p. R.A.F. and the F.K.8 with the 160 h.p. Beardmore engine designed by Mr. Koolhoven and produced very early in the war both gave excellent results and were extensively used. Later Armstrong experimental designs, particularly the "Armadillo" and the "Ara," showed that the firm were capable of maintaining the high standard of their earlier productions.

Beside their aeroplane activities, Armstrong Whitworth successfully undertook the manufacture of rigid airships for the Admiralty.

In response to an inquiry as to their future policy this firm says :—

"In reply to your letter we would inform you that it is our intention to close down both our aeroplane and airship departments, owing to the curtailment of the Government aircraft programme.

"The stoppage of aircraft contracts and lack of policy as regards civil aviation has necessitated the discharge of our experienced staff and personnel.

"Inquiries made both in England and abroad as to the aircraft business to be obtained or contemplated show that it is so small as not to justify our going on with aircraft manufacture for some years to come."

Boulton & Paul, Ltd.

Boulton & Paul, Ltd., of Norwich, were before the war well-known manufacturers of steel and wooden buildings and other types of structural engineering. Their entrance into aircraft manufacture was a result of war conditions. In addition to the production of large numbers of machines to official specification, the firm have, under the management of Mr. Geoffrey ffiske and with the assistance of Mr. J. D. North as chief designer, produced excellent machines of their own design. In particular the Boulton & Paul "Bourges" twin-engine fighter-bomber must be considered to be one of the most efficient large machines yet produced. It is therefore cheerful to hear that the firm are to keep their experimental department working on the development of new types.

Mr. ffiske says :—

"My company are amongst the fortunate ones that can turn their aircraft shops into their pre-war business, and I am pleased to say that the whole of our shops are nearly settled down to commercial work, which includes horticultural and agricultural appliances, wooden bungalows and cottages.

"We are keeping our experimental department fully employed on the development of new types and improvement of aircraft. We hope by this means to help, with others, in keeping British aircraft to the fore."

The Central Aircraft Company.

This firm, founded during the war, was employed till the Armistice on the manufacture of machines to official specifications. Since then they have designed and built a number of machines for post-war purposes, and have put a flying school into operation at the Northolt Aerodrome.

They propose to continue the manufacture of their machines for use at their school, for "joy-rides," and for passenger services which they run, and for sale at home and abroad.

As, however, the demand for machines is not expected to keep their works fully occupied at present, they have taken up a number of other classes of work, and are busy on the construction of furniture, toys, motor-lorry bodies, car repairs, and general engineering and woodwork.

The Gnôme and Le Rhône Engine Company.

There is little need here to dilate upon the services rendered to the Aircraft Industry generally by the Gnôme and Le Rhône engines. The Gnôme and Le Rhône Engine Company, who own the British rights in these engines, say that at present their works are chiefly occupied with work in connection with the automobile industry, and that they are devoting attention to the development of engines for such work.

The aero-engine and the experimental departments are being maintained, however, though naturally the aero-engine output has been greatly reduced.

D. Napier & Son, Ltd.

The makers of the famous Napier cars were one of the first of the firms who diverted their normal activities to assist in the construction of aircraft.

In addition to the construction of actual aeroplanes to Government order and specification, the firm turned its equipment onto the production of engines, turning out large numbers of engines of R.A.F. design, and also developing, under severe difficulties, their own now famous three-row 12-cylinder engine of 450 h.p.

Since the advent of peace D. Napier & Son, Ltd., have ceased to build aeroplanes, but they have been enabled convincingly to demonstrate the qualities of their engine.

Their works are mainly employed in the manufacture of private and business motor vehicles.

As to the aeronautical side of their business the firm state :—

"We have every confidence in the ultimate success of commercial aviation, and are continuing with our programme to manufacture the 450-h.p. Napier aero-engine, which has already proved itself thoroughly reliable and airworthy, with the result that we have every reason to anticipate business resulting in due course."

The Sopwith Aviation & Engineering Company, Ltd.

The Sopwith Company, under the direction of Mr. T. O. M. Sopwith, are of the earliest of the pioneer aeroplane constructors. The work which they have done towards securing the ascendancy of the British aircraft for war purposes is familiar to everyone, and an attempt to catalogue their achievements here is quite unnecessary.

In response to an inquiry as to their views of the future, Mr. Sopwith has supplied the following statement :—

"The civil aviation situation, as it presents itself at the moment, is, I suppose, one of the most difficult problems that the Aircraft Industry has ever had to tackle.

"The era of peace has hardly yet really dawned, as aeroplanes cannot be exported to certain countries (and some of them are the most interesting from a civil aviation standpoint) without special permission, which in some cases it is impossible to grant, owing to the disturbed state of these countries. Apart from this, however, it would seem that the future progress of civil aviation resolves itself into three main heads :—

"(1) The obtaining of data as to costs, the averages of days flown during the year, and definite information as to reliability and consistency of any given service.

"(2) The education of the non-flying public by propaganda, etc., showing the possibilities of aerial transport, educating them as to the danger aspect—*i.e.*, that it is not nearly as high as the lay Press very often puts it—and generally actively to impress on the non-flying world the high practicability that aerial transport has reached.

"(3) The establishment at the earliest possible moment of aerodromes and emergency landing grounds on all the main routes, and organisation generally in much the same way as the railways have had to build up an organisation.

"In a word, the situation is very similar, so far as the non-flying public are concerned, to the institution of railway travel. Until these three main heads have been adequately dealt with, I do not see any prospect of commercially remunerative activities for aviation firms.

"So far as the policy of my company is concerned, we propose actively to engage on experimental and competition work, and to follow the developments as facilities increase, but I think that, for the next several months, it is only reasonable to regard the civil aviation side of any aircraft business as in a state of semi-suspended animation.

"It is of vital importance that the chief designing firms should maintain, at any rate, a nucleus of their aviation staff and factory personnel, so that the *métier* may not be lost and the Industry become moribund. It is only possible to do this by, in the meantime, taking up the manufacture of products outside aviation, and of such a nature as to keep as far as possible the *status quo* as an aviation firm.

"As to the military side, this is at present wrapped in mystery. It is therefore impossible to estimate what prospect there will be for aviation firms having Government support in order to maintain an industry for military requirements.

"Of this I am sure that the aviation future, be it soon or late, is certain, but the only way to ensure its security is to hasten slowly."

J. Samuel White & Company, Ltd.

This well-known Isle of Wight firm of shipbuilders entered the Aircraft Industry some time before the war, and under the management of Mr. Howard T. Wright their aviation department produced the notable series of "Wight" seaplanes, an early example whereof was purchased by the German Government, and appears to have produced a permanent effect upon German seaplane float design.

In answer to a request for their views as to the future of the Aircraft Industry, J. Samuel White & Company, Ltd., say :—

"We regret we are not in a position to give you our views upon the future of Aircraft Industry, as we have definitely closed down our aviation department, and at present have no intention of reverting to aeroplane construction."

THE STANDARDISATION OF CHAINS.

The Association of British Driving Chain Manufacturers announce that they have now completed the standardisation of roller chains up to ¾-in pitch. For the convenience of chain users, and to insure complete interchangeability, they have also standardised chain wheel tooth forms. These new tooth forms, while not being identical with any of the existing forms, incorporate the essential features of each.

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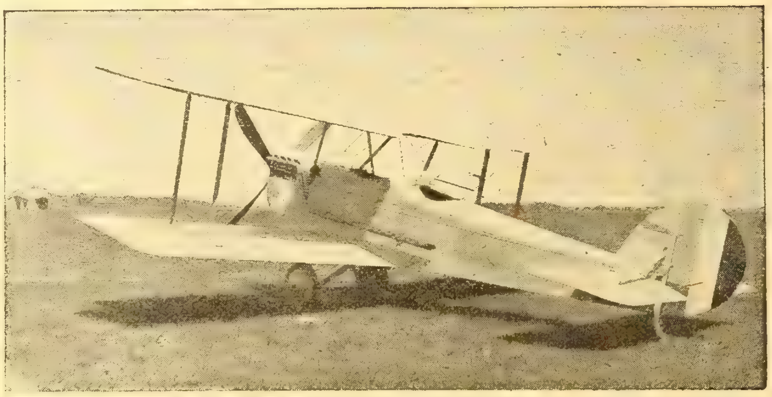

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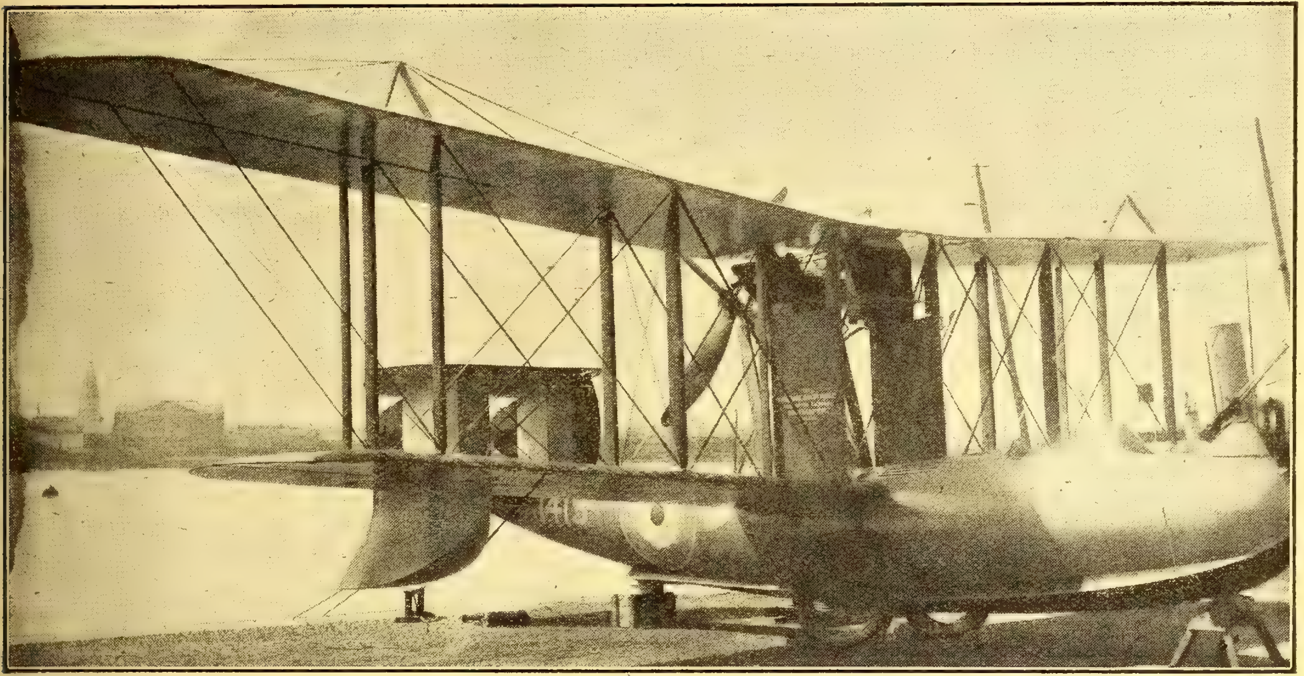
MODERN BRITISH AEROPLANES.

XIX.—The Supermarine Aviation Works, Ltd.



Three-quarter Front View of a Supermarine A.D. Type two-seater (200 h.p. Hispano-Suiza engine).

The Supermarine Aviation Works, Ltd., were founded in 1912 by Mr. Noel Pemberton Billing as Pemberton Billing, Ltd. In those early days the firm produced some very interesting experimental flying-boats.

During the war Squadron Commander—as he then was—Pemberton Billing gave up all his interests in the firm and its title was changed to the present one, and Mr. Hubert Scott-Paine assumed control.

The firm produced during the period of hostilities many interesting machines, including the "Night Hawk" quadruplane, a machine doomed to insuccess by the absence of suitable engines, and the "Push Proj," a small, single-seat pusher fighter with an extraordinarily good all-round performance, which was built in some number to the order of the Admiralty.

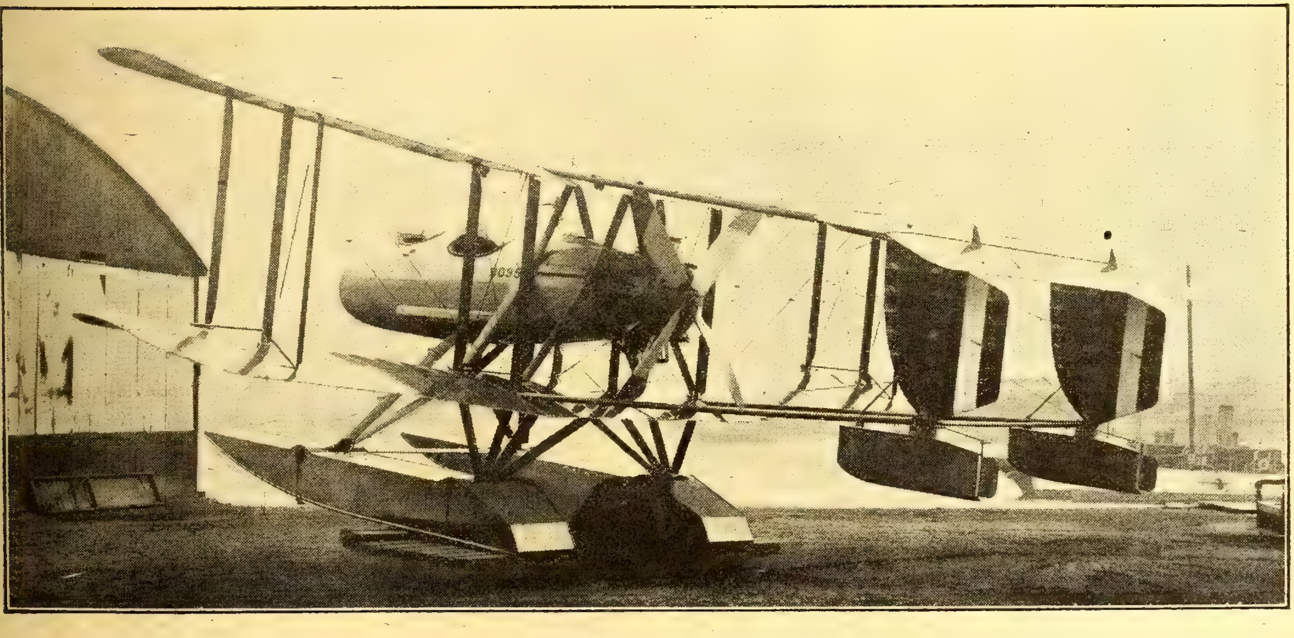
In 1916 the firm were given orders to build an experimental flying-boat of Admiralty design. After many alterations and modifications introduced by the firm this machine—generally known as the A.D. boat—became a distinct success.

THE SUPERMARINE A.D. TYPE BOAT.

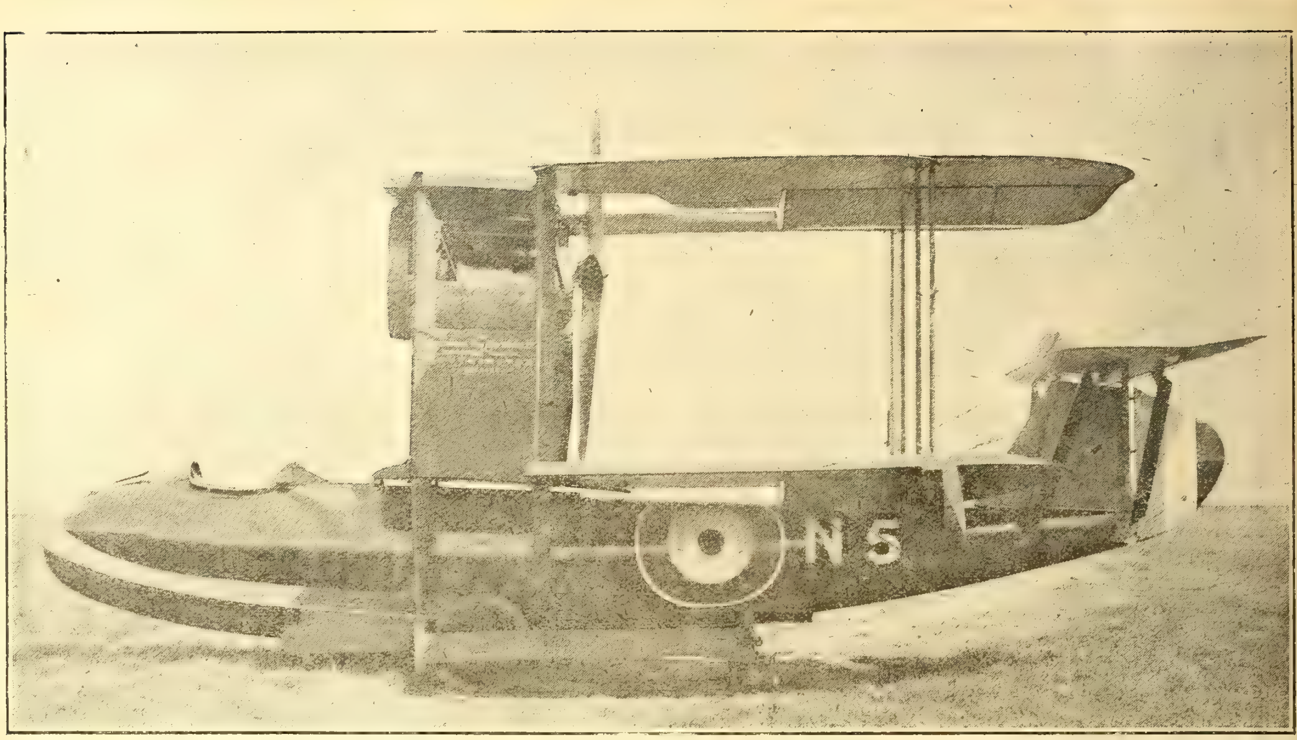
This machine was designed for sea patrol and reconnaissance work, and was a tandem two-seater, with a gunner-observer in the bow of the hull, with the pilot behind.

The hull was of the type associated with the name of Major Linton Hope, in that it was built up on a framework of approximately circular sections, composed of a number of fairly light longitudinal members tied together by very light and flexible rings of elm. This main skeleton is completely planked over with thin mahogany, and forms a tubular body which is extremely stiff against either bending or torsion.

At the same time it is not a rigid structure, in that all the ring elements of which it is built are flexible and capable of distortion into an oval section without damage—a quality



A Pusher Seaplane built by the Supermarine Works in 1916. Owing to the radial engine with which it was fitted not providing sufficient power the type was not reproduced.



Side View of the Supermarine "Baby" (200 h.p. Hispano-Suiza) with wings folded.

which acts as a very effective springing against "taxying" and alighting shocks.

Projecting fins which form the planing surfaces, also built on a framework of flexible timberings, are built onto the main tubular body to complete the hull. In practice this type of hull has given extremely good results on the water, and stands up well to the very worst weather.

The wing structure is of the usual biplane type, with a large overhang braced above from a pylon. The upper centre section is carried from four vertical struts, with a separate structure supporting engine and radiator between them.

The wings are arranged to fold forward, hinging on the front spar, an arrangement which adds somewhat to the overall length folded. Folding to the rear in the ordinary way would have meant a longer hull to carry the tail clear of the wing bracing, with a considerably increased hull weight and an impaired manœuvrability.

The power plant consisted of a 200 h.p. Hispano-Suiza engine, a type of engine which never gave great satisfaction in these machines on account of continual trouble with the reduction gear and the propeller hub.

The tail unit was a biplane, with twin fixed fins enclosing the intertail struts, each having a rudder. The tail is curious in that the upper and lower surfaces were of wing profile in section, but the upper was inverted—*i.e.*, was concave upwards—whilst the under surface was in the usual position. The upper inverted surface working in the slipstream carried a heavy down load when the engine was running, and supplied a moment balancing that caused by the high thrust of the airscrew.

The machine was fitted with tanks for 4½ hours' full-power flight, Lewis gun and ammunition, and wireless.

With this load the machine gave an excellent all-round performance with a top speed in the neighbourhood of 85 knots.

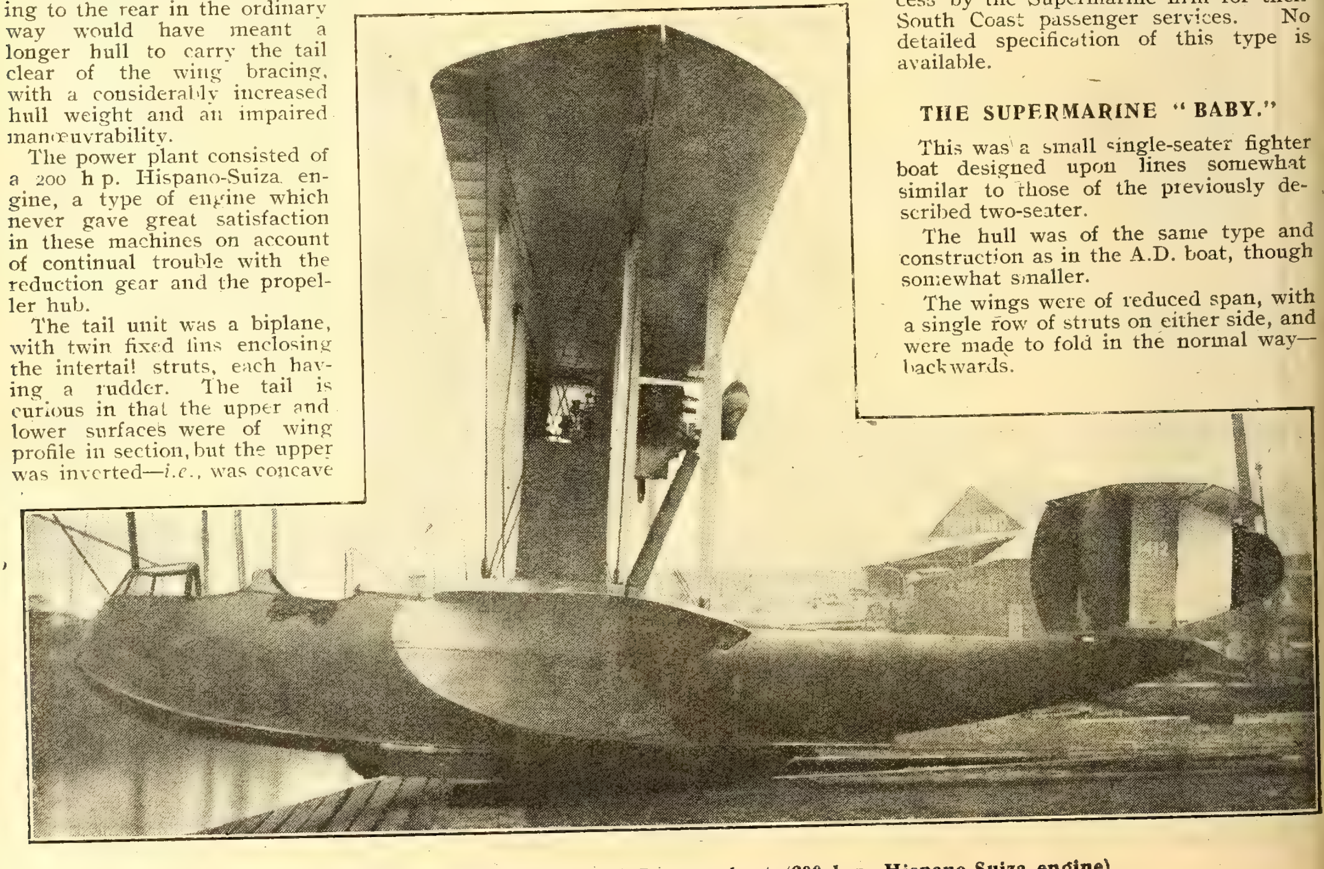
Machines of exactly similar type, fitted with 160 h.p. Beardmore engines, and with increased passenger accommodation, are being used with great success by the Supermarine firm for their South Coast passenger services. No detailed specification of this type is available.

THE SUPERMARINE "BABY."

This was a small single-seater fighter boat designed upon lines somewhat similar to those of the previously described two-seater.

The hull was of the same type and construction as in the A.D. boat, though somewhat smaller.

The wings were of reduced span, with a single row of struts on either side, and were made to fold in the normal way—backwards.



Side View of the Supermarine A.D. type boat (200 h.p. Hispano-Suiza engine).

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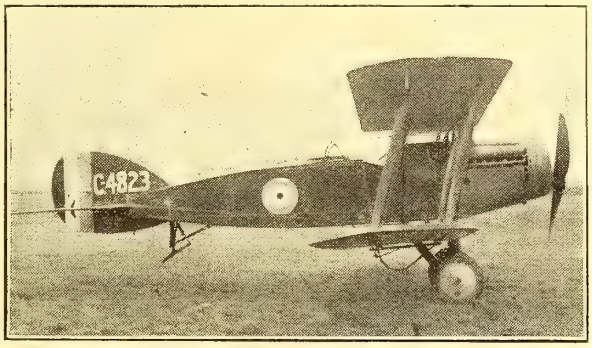

In September, 1917, a Bristol Fighter was delivered from the "Bristol" works and put into commission in the fighting area. It was unfortunately landed in Holland and soon afterwards was acquired by the Dutch Government. From that time until now, though in continuous use by the Dutch Pilots, the **"CELLON DOPE"** has never been renewed and is still in perfect condition. The machine has never been repaired or renovated in any way, every unit being exactly as when it left the "BRISTOL" works.

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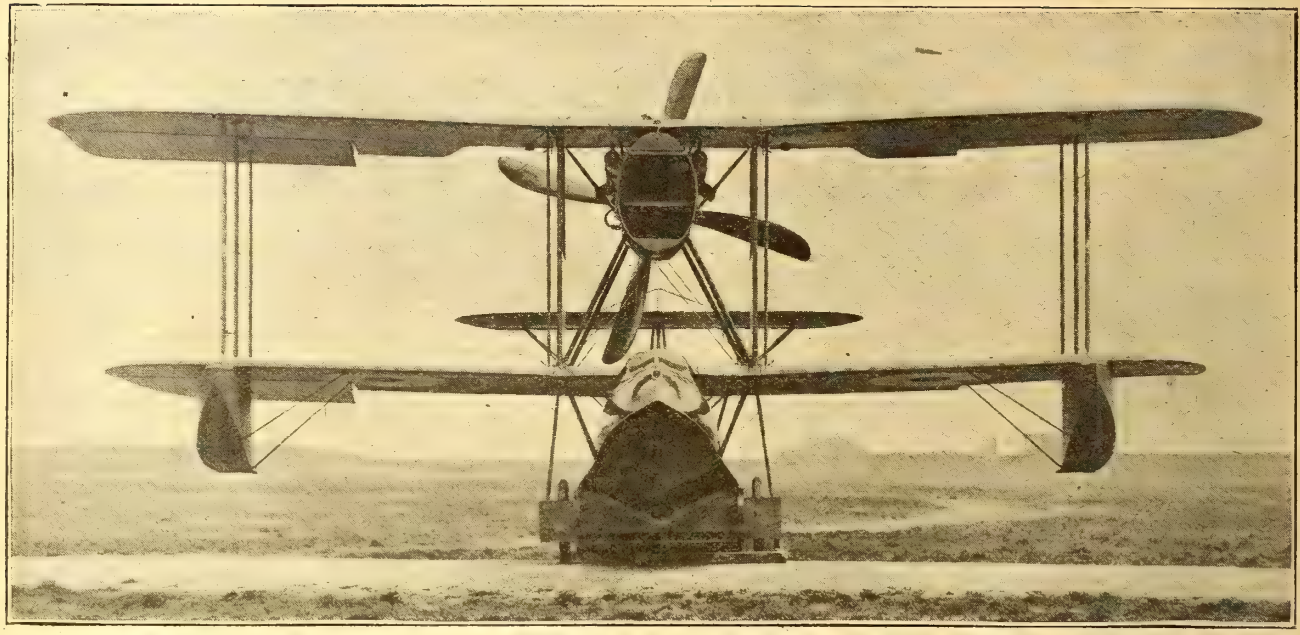
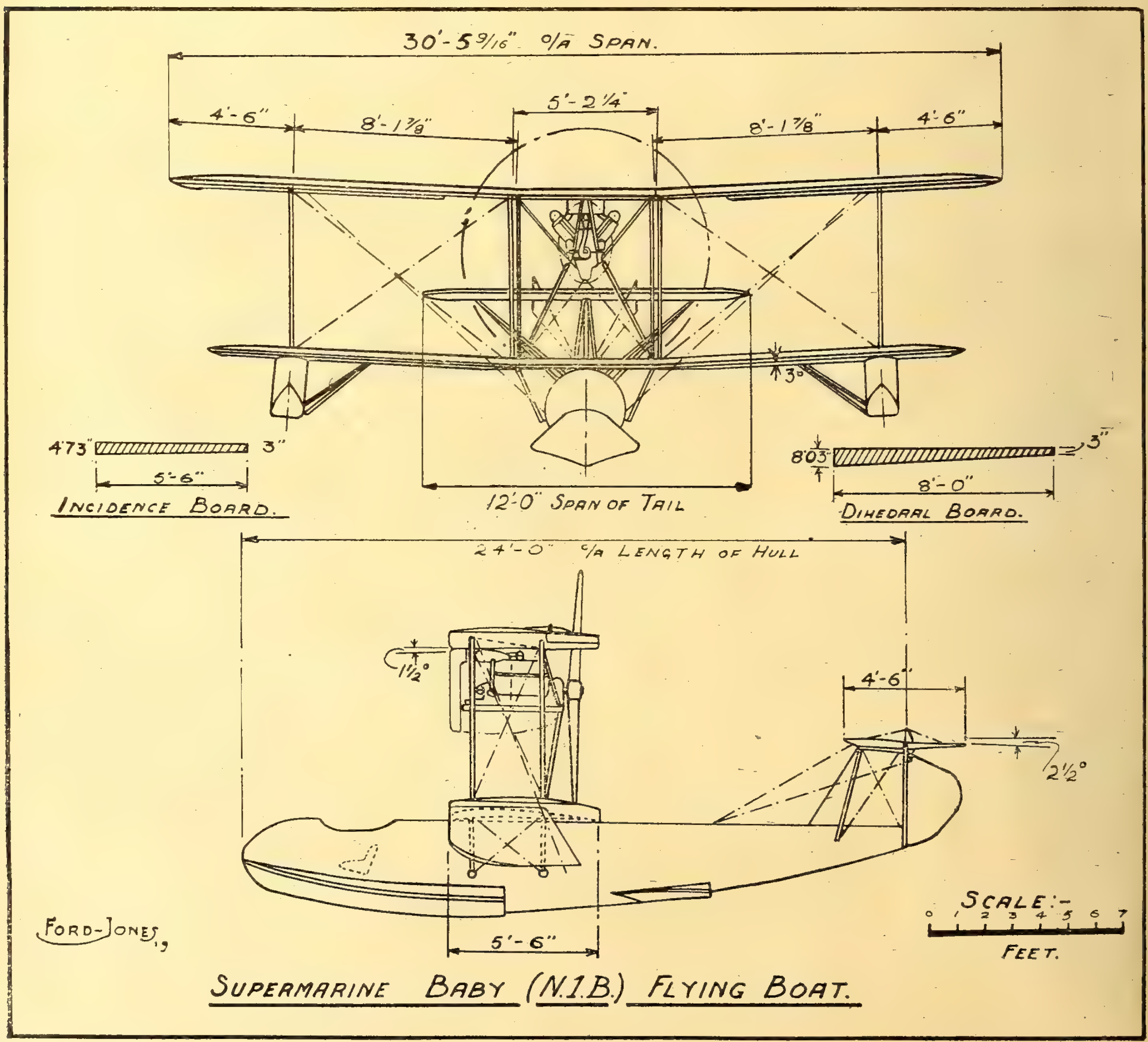


Front View of the Supermarine "Baby" (200 h.p. Hispano-Suiza), of which drawings are given below.



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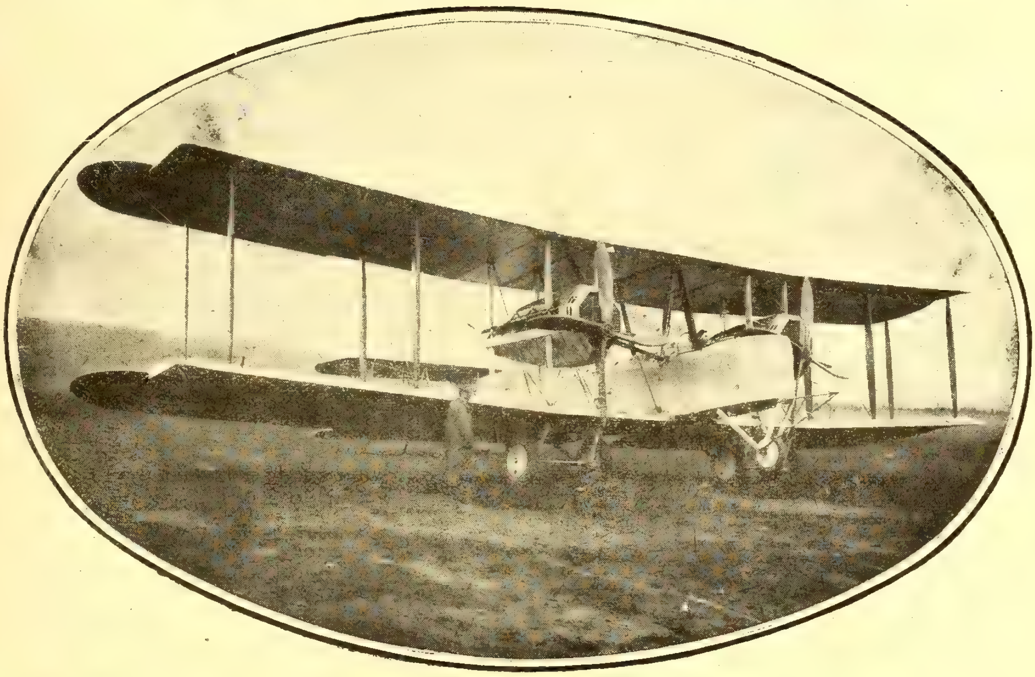

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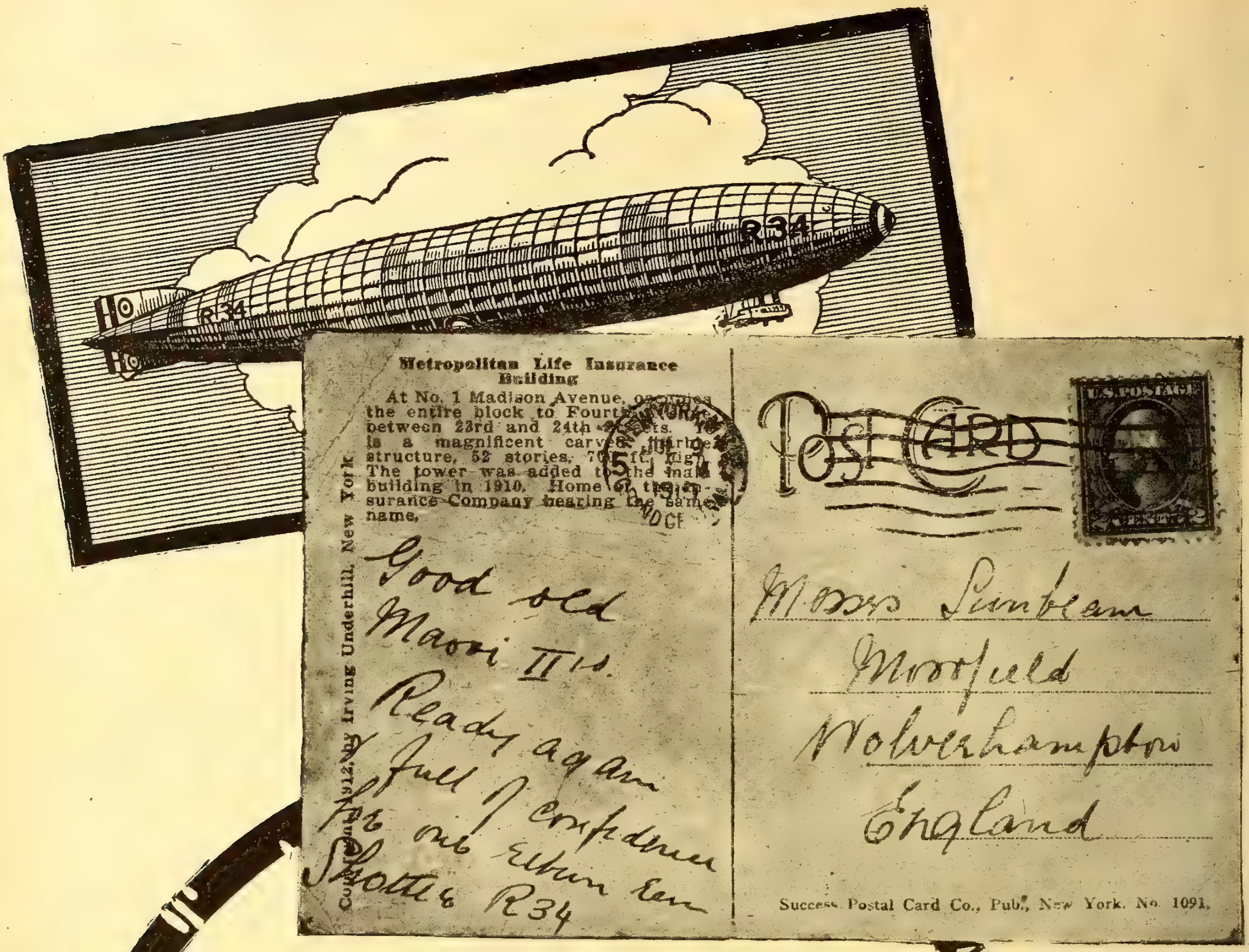
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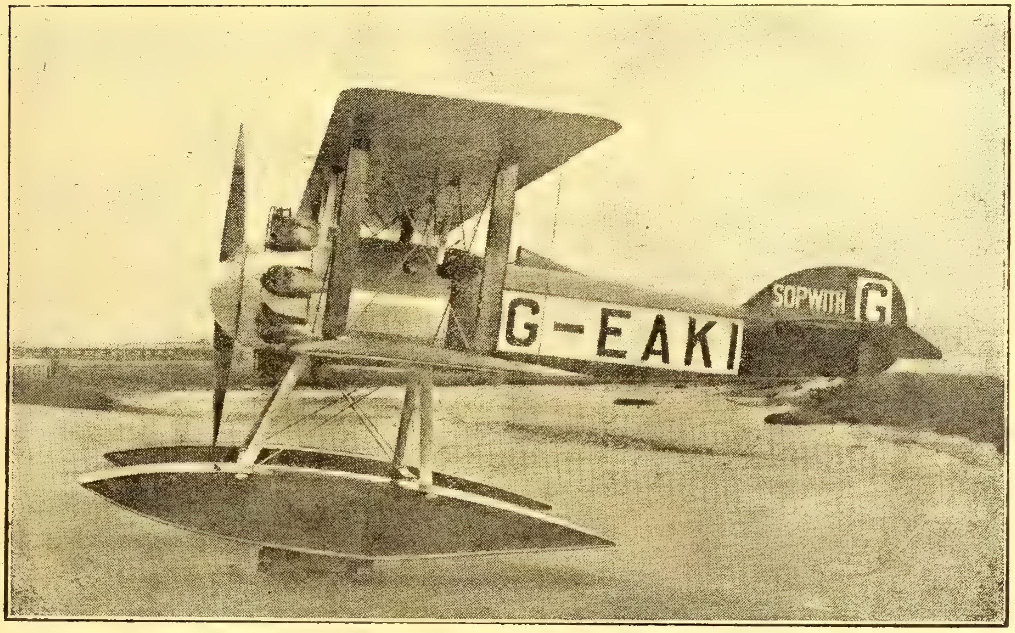

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Extract from Chap. II.

1. And when he was come unto Farn, Roy was compassed about by a great multitude.

2. And he beheld winged chariots of divers designs; thus there were the Scout, and the Dolphin, and the Martinsyde, and the Camel, even that which produceth the hump.

Extract from Chap. XXI (and last).

17. And in all thy ways consider this, that there be two things greater than any other in forming the character of him that flies; and the one is Energy and the other, it is Enthusiasm.

19. And take thou a pride in being an aviator; for hath not the great Hender said, These young men are the salt of the Earth.

20. Go thy way in courage and good cheer; and greet the Great Adventure with a song.

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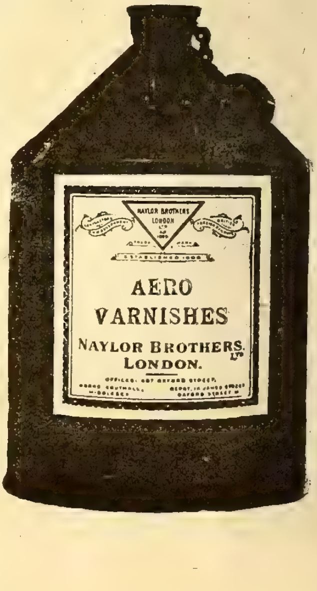

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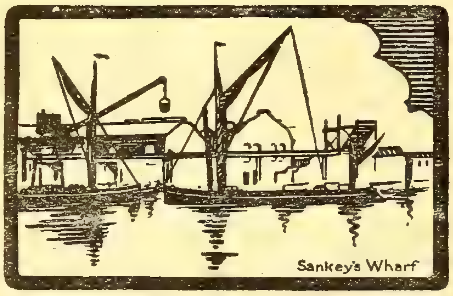

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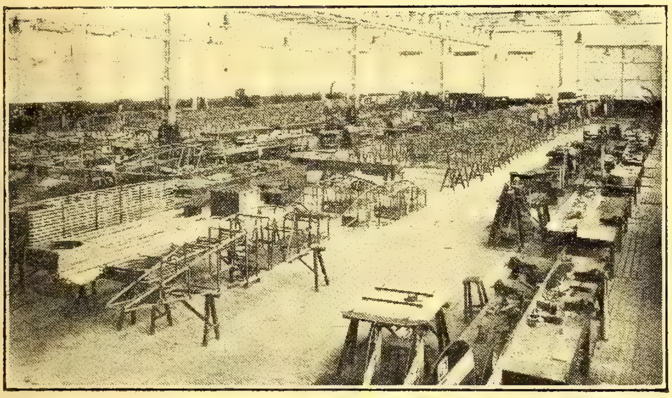

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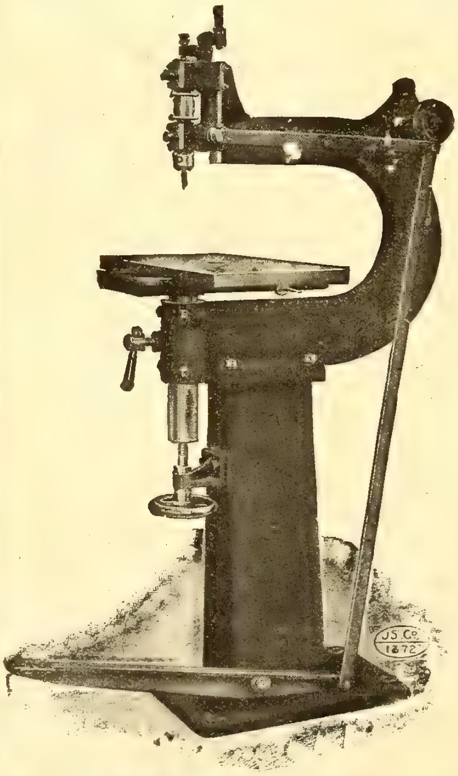

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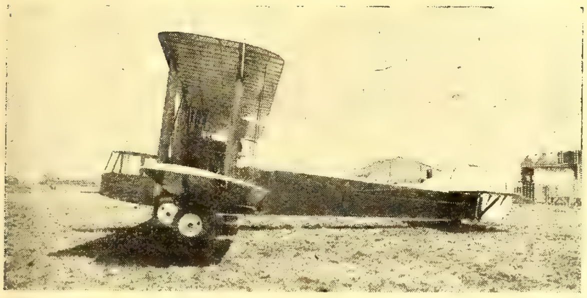

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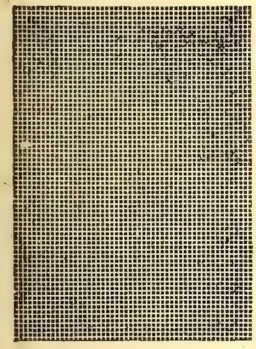

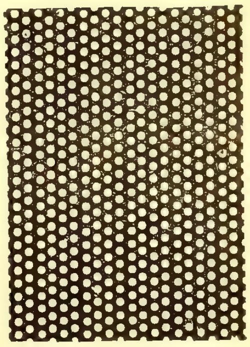

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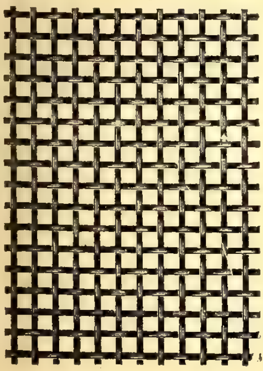

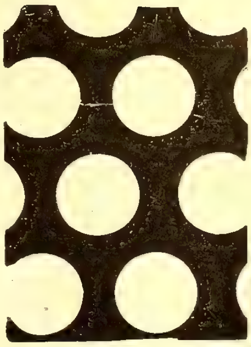

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TAIL :—Can be trimmed in flight from pilot's seat—steering and practically unbreakable tail skid.

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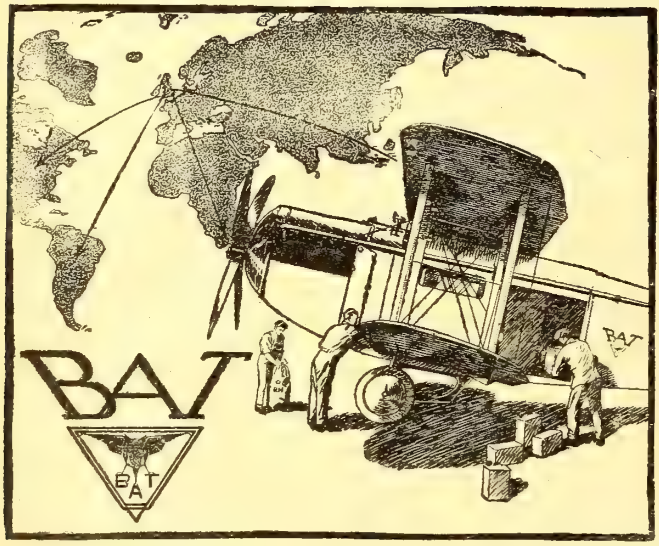

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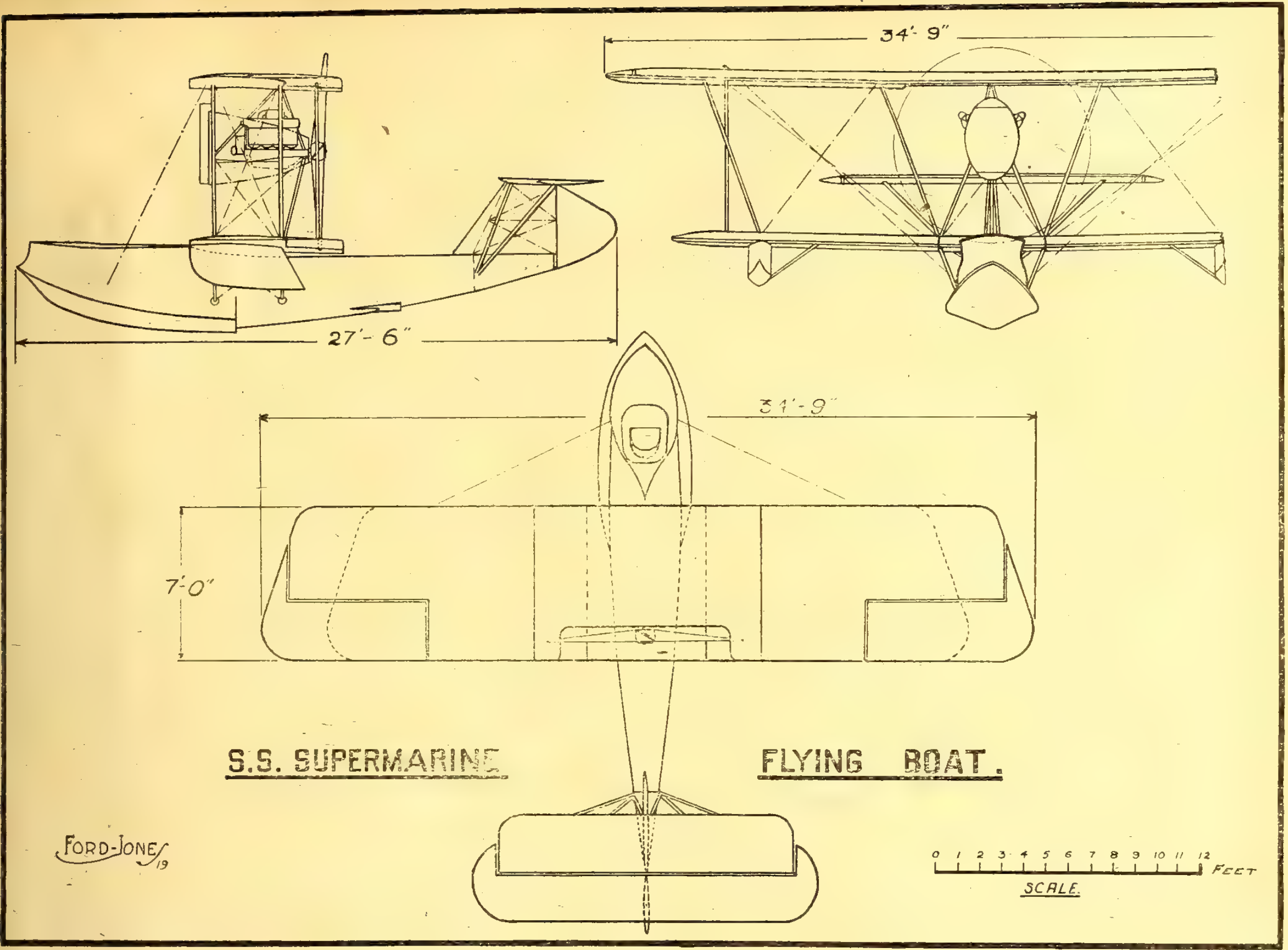
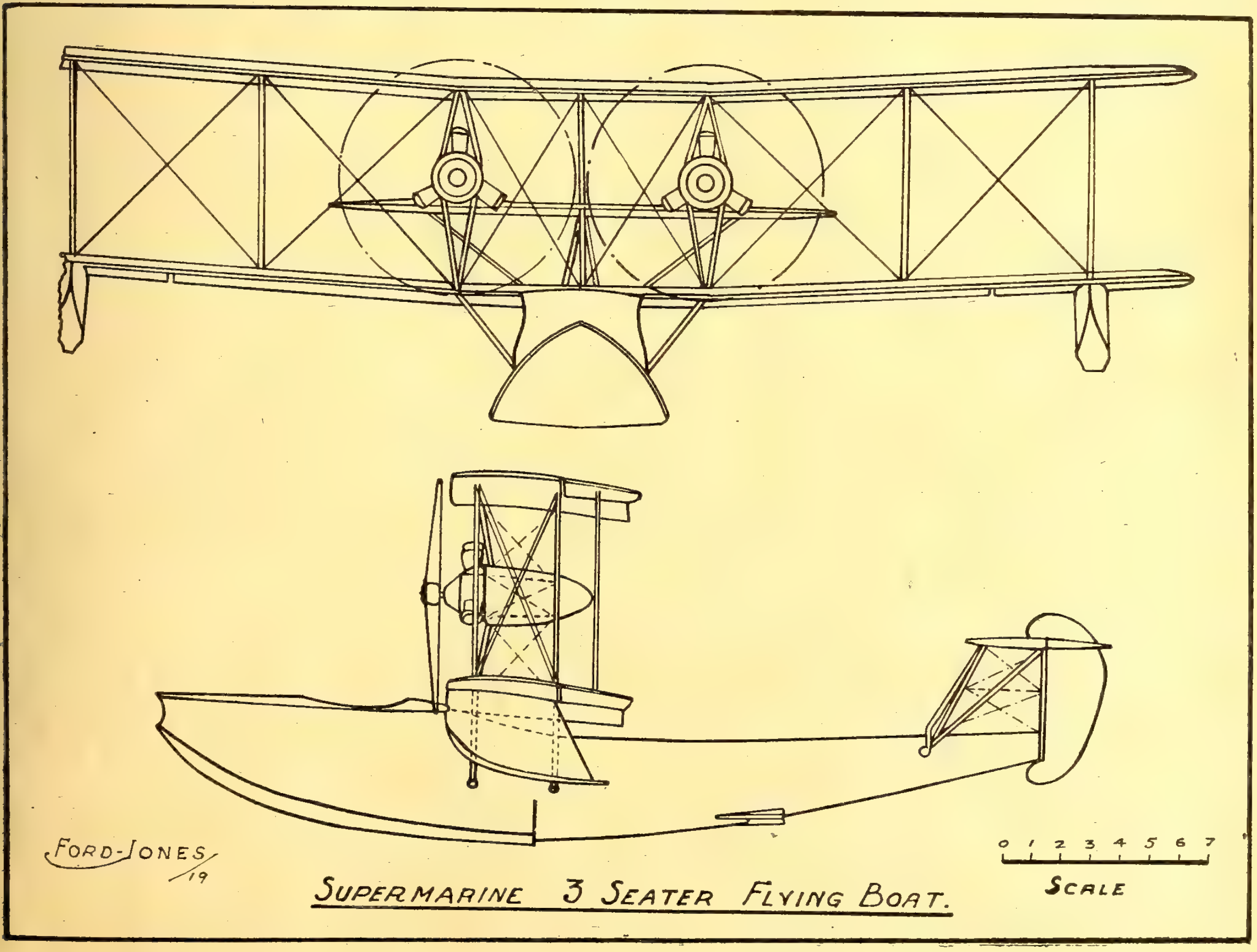


S.S. SUPERMARINE FLYING BOAT.



SUPERMARINE 3 SEATER FLYING BOAT.

Specification :—

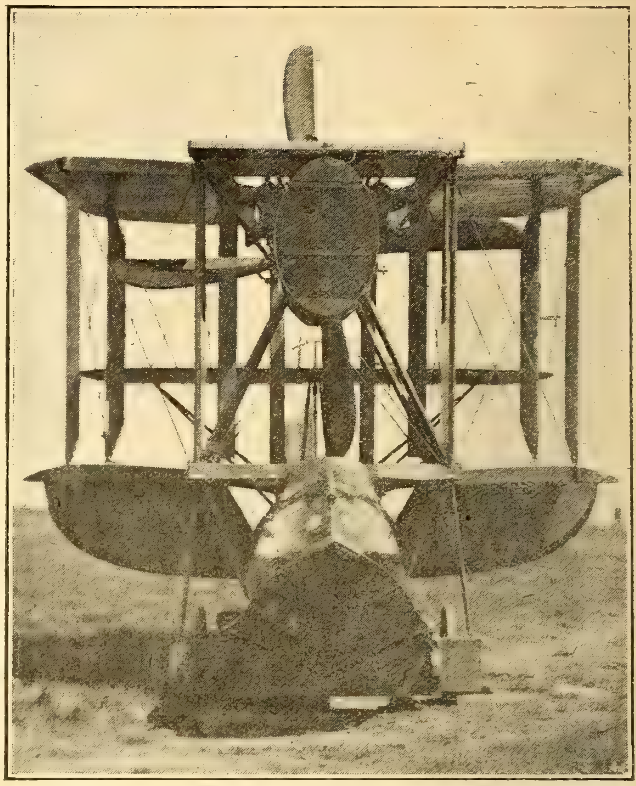
Type of machine	Single-seater Flying-boat.
Name of machine	Supermarine "Baby."
Purpose for which intended	Single-seater Seaplane Fighter.
Span	30.5 ft.
Overall length	26.3 ft.
Maximum height	10.6 ft.
Chord	5.5 ft.
Total surface of wings	309 sq. ft.
Engine type and h.p.	Hispano-Suiza 150-h.p.
Weight of machine empty	1,699 lb.
Load per sq. ft.	7.5 lb.
Weight per h.p.	15.5 lb.
Tank capacity in hours	3 hr.
Performance—	
Speed low down	117 m.p.h.
Landing speed	57 m.p.h.
Disposable load apart from fuel	627 lb.
Total weight of machine loaded	2326 lb.

In addition to these machines the firm have the following designs in hand :—

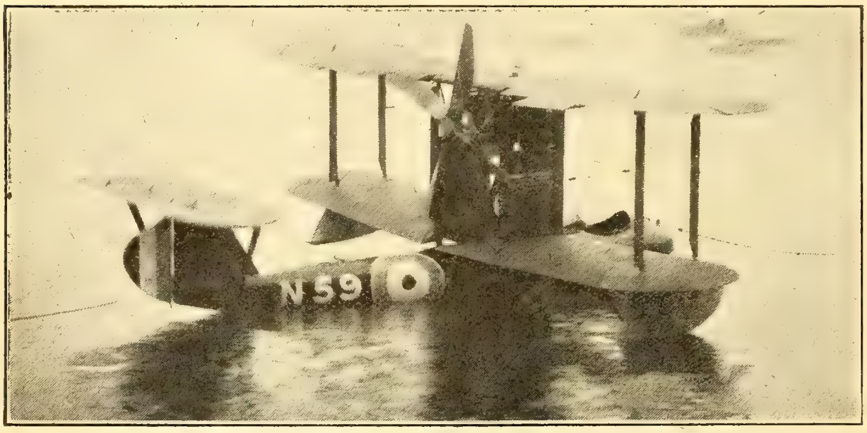
Type A.—Small single-seater high-performance machine designed for a speed of 130 m.p.h. and a climb to 10,000 ft. in 8 min. The attached scale drawing shows that this machine is in general arrangement very like the machine which, fitted with a 450 h.p. Napier engine, was entered for the Schneider Cup Race.

Type B.—A twin-engined training flying-boat, shown in a scale drawing. The machine is fitted with dual control in two side-by-side seats, with an additional seat for passenger. Two 100 h.p. three-cylinder Cosmos "Lucifer" engines form the power plant, which should give a maximum speed of 90 m.p.h. With minor modifications this type becomes a three-seater sporting model.

Type C.—A small passenger or mail flying-boat for one pilot and three passengers or their equivalent. To be fitted with a Beardmore engine of 160 h.p.



Front View of the Supermarine "Baby" folded.



The Supermarine "Baby" on the water.

Type D.—A long-distance passenger, mail and commercial flying-boat of the triplane variety, to be fitted with three Cosmos "Jupiter" engines of 500 h.p. each. Accommodation is to be provided for navigator, two pilots, and 24 passengers, or 1½ tons of mail or goods. A speed of 98 m.p.h. and a radius of 4 hours at that speed are hoped for.

Mr. Hubert Scott Paine, the Managing Director of the Supermarine Company, is firmly convinced of the practical utility of the boat type of seaplane, both for naval and for commercial purposes.

It may therefore be expected that Supermarine developments of the future will be at least as interesting as those of the past.

20 YEARS' PROGRESS.

Mann, Egerton and Co., Limited, have issued a souvenir booklet entitled "20 Years' Progress in Pictures," which gives a very complete history of that esteemed firm from their inception as electrical engineers to their present-day position as one of the largest motor and electrical engineering concerns in Great Britain.

Practically fifty per cent. of the illustrations show the various types of aircraft this firm built to their own and outside design.

Founded in 1899 as electrical engineers, the motor-car department was inaugurated shortly afterwards; and in 1905 the present company was floated with the object of amalgamating the motor and electrical departments under one management.

From that date until August, 1914, progress was steady and rapid, with the result that on the outbreak of war the company was one of the largest and best-known motor agency and electrical engineering concerns in the country, with branches at Norwich, Ipswich, Bury St. Edmunds, and London.

Naturally, on the outbreak of war the company undertook a considerable amount of war work, principally in connection with the motor industry, but with the increasing demand for aircraft, the firm were requested by the Admiralty to set up an organisation for the manufacture of seaplanes.

In order to cope with this work, the whole of the extensive coachbuilding factory as well as a large proportion of the motor repair and engineering works were handed over for the manufacture of aircraft. Additional works and shops were constructed in Norwich and an aerodrome of 60 acres was laid down.

In all, ten different types of aircraft were built for Service purposes, the total horse-power turned out being over 175,000.

Now that hostilities have ceased, the company have completed a comprehensive scheme of reconstruction, keeping their original business as motor engineers and coachbuilders first and foremost, but the aircraft branch will still be maintained with a view to future development in connection with civil aviation as well as their electrical departments and the manufacture of the "Willett Air Gas" system of lighting, of which they are the proprietors and sole manufacturers.

One feels sure that the firm of Mann, Egerton and Co., Ltd., will maintain the reputation they hold throughout Great Britain and the Colonies as agents of every make of car of repute, and also with regard to the system of service and repairs, the large repair depôts in Norwich, Ipswich, Bury St. Edmunds, and London being equipped with the latest machinery, and the completeness and efficiency of its organisation enables them to carry out repairs to any make of car promptly, skilfully and at strictly competitive prices.

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made by an aeroplane fitted with Napier Engine and B.T.H. Magnetos was completed in 7¾ hours. From the moment of leaving Acton to the landing in Madrid, engine and magnetos functioned perfectly, and never caused the pilots to have a single moment of anxiety.

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The subscription list of the Aeroplane, both at home and abroad, is steadily increasing: an eminently satisfactory movement which we are anxious to encourage.

Of the many books published on the war on the Western front, none conveys a more realistic impression of the work of a particular arm than FLYING COLOURS by Captain H. M. S. Saundby, M.C., A.F.C., R.A.F., published at **£2 2s.** net (Edition de luxe) and **15/-** net (Popular Edition).

Among the art books published in the last year or two, none can claim to be a more faithful reproduction of the artist's colour scheme and that indefinable thing, atmosphere.

FLYING COLOURS is a permanent memorial of the life of "the pilot in action," as Major-General C. B. Ashmore calls him. It was very costly to produce, and necessarily the price to the public had to be high.

Many would like to possess it who do not feel disposed to put down Two Guineas for the larger edition or Fifteen Shillings for the smaller.

How to meet their views? We make a special offer to any subscriber for one year to the Aeroplane: namely to give him the right to purchase either edition at half price.

All he need do is to send us the accompanying order form with cheque for one year's subscription, plus **£1 1s.** or **7s. 6d.** according to the Edition he wishes to have.

In order to be fair to current yearly subscribers we extend the half-price concession to them also. If a subscriber has paid a quarterly or half-yearly subscription, then to secure the right to participate he should send the balance for the year.

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If the subscriber already has a copy of FLYING COLOURS, and would wish to take advantage of this offer, then he may secure McCudden's "Five Years in the R.F.C." **(7s. 6d.)**; Richthofen's "Red Air Fighter" **(3s. 6d.)**, and Gill's "The Aerial Arm" **(6s. 6d.)** at half price, *i.e.* **8s. 9d.** the three, plus the year's subscription to the Aeroplane.

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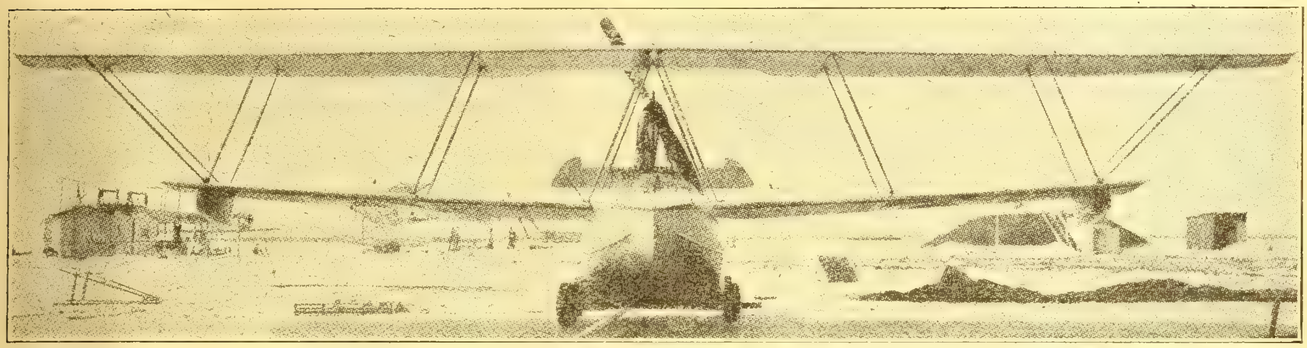
THE GERMAN OERTZ FLYING BOATS.

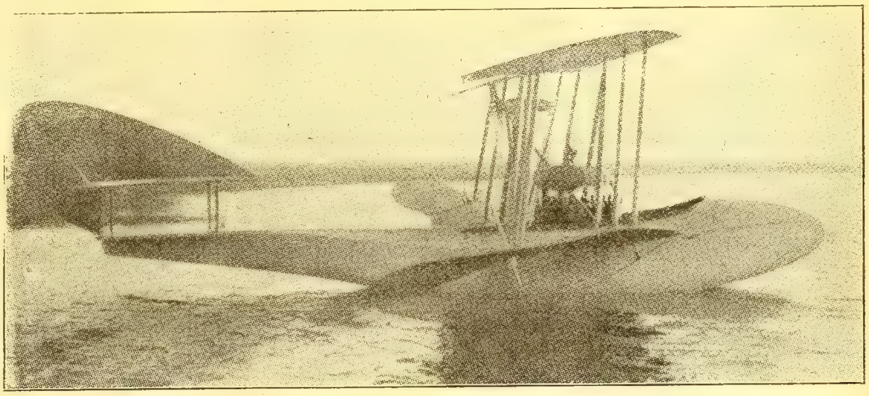
By ERIK HILDESHEIM (Copenhagen)



Oertz late 1915 Flying Boat, equipped with a 240 h.p. Maybach Airship Engine.

During the war the Germans stuck as exclusively to the use of seaplanes for their Naval Air Service as did the Austrians to flying-boats in the Adriatic, and the only practical German flying-boats, so far, were turned out by the yachting yard of Max Oertz at Hamburg, known as the designers of the ex-Emperor's racing craft "Meteor" and "Honenzollern."

The German view, apparently still unsettled, seems to be that as weights of seaplanes and flying-boats come out almost equal for horse-powers from 150 to 240 the former are more suitable up to 300 h.p., while both types will be employed in conjunction up to 700 h.p. Above that the weights are to the advantage of the flying-boats, so that big aircraft will always be of the latter type, showing, for instance, a saving of about two tons, compared with a 1,000-h.p. seaplane.



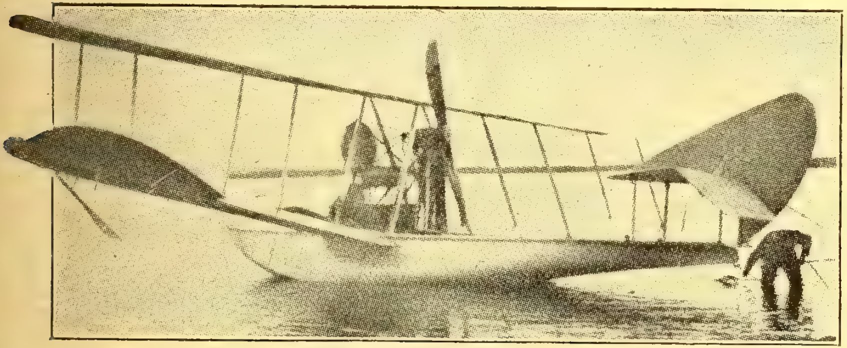
The first 1913 Oertz Flying Boat, equipped with a 100 h.p. Argus motor.

The first aeroplanes turned out by Oertz in 1910 were three-ply-wood clean bodied 70-h.p. Gnôme-engined monoplanes, piloted at a weight of 350 kilos. at speeds of 130 kilometres per hour, by the present director of the Dutch Trompenburg aircraft works, H. Wijnmaalen and the late Vollmoller, killed in experimental work with the Staaken multiple-engined giant biplanes.

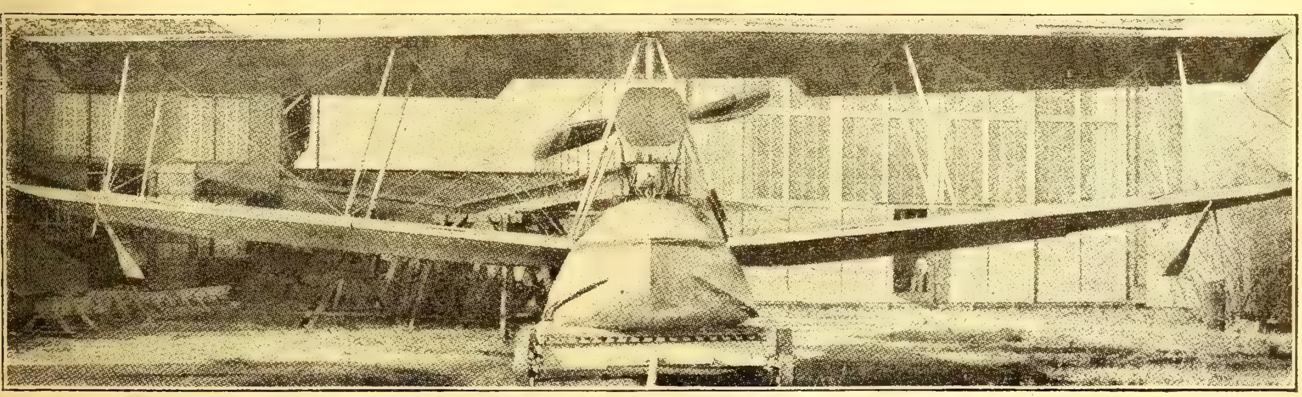
When the firm's Deperdussin-trained engineer, Dax, was killed in a landing accident, aircraft work was stopped and not again resumed till 1913, when the Imperial Naval Office ordered a flying-boat, driven by a 100-h.p. Argus motor through spur-wheel gear.

The engine was mounted in the boat and the planes divided in the middle and combined by inclined struts, the lower ones being larger to avoid pendulum movements from the low-placed motor by keeping the centre of pressure as low as possible.

The hull had no steps, and owing to engine troubles no duration flights were carried out.



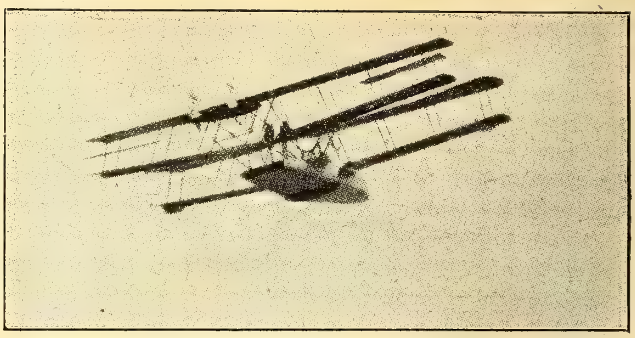
Two Oertz flying-boats of different models, both with engines in the hull and a gear-drive to the airscrew. Note the wing tip splashboards used in place of wing floats, and the upturned ailerons on the upper example. The upper picture is a 1914 type with 160 h.p. Daimler engine, the lower dates from 1917, and is fitted with the 240 h.p. Maybach engine.



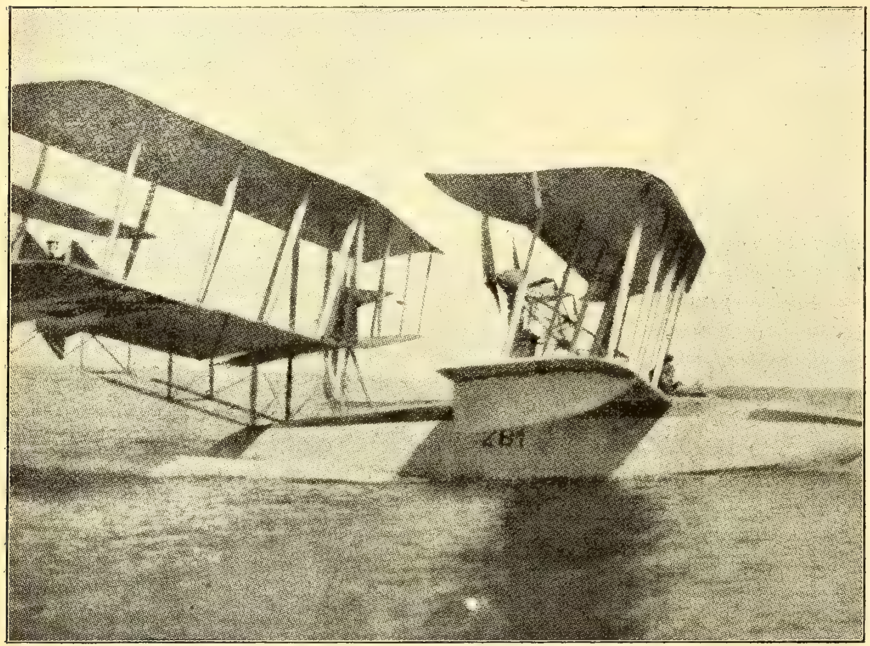
The second flying-boat, provided with the first 160-h.p. Daimler-built aero engine, was turned out for the Warnemünde naval flying competition, abandoned owing to the outbreak of war.

Oertz Specifications.

An evidence of the Germans experiencing difficulties in engine manufacture both with regard to keeping production time and performance is to be found in the German Admiralty order for a series of Oertz flying-boats, to be equipped with 260 h.p. Argus engines, which got delayed in supply and turned out excessive in weight. So Maybach 240-h.p. airship motors, with reduction gears, were employed in autumn, 1915, and a flying-boat turned out especially for this engine model being presented to the navy by the Krupp proprietors von Bohlen and Halbach. The original wing-tip hydroplanes were replaced by ordinary wing floats. The main dimensions of the first Oertz boats were: hull length, 10.7 m.; beam, 2.5 m.; maximum span, 18 m.; total area, 77 sq. m. Useful load, 620 kg. The speed was 120-125 km.p.h. The main dimensions of the 1917 Oertz flying-boat, designed for the 240-h.p. Maybach motor were as follows: Length of hull, 9.96 m.; beam, 2.21 m.; span of top planes, 19.6 m., of lower planes, 15.6 m.; total area, 70 sq. m.; useful load, 641 kilos.; speed 140 km.p.h.



The Oertz Schooner in the Air.



The Oertz twin-engine Tandem (Schooner) Flying Boat taxi-ing.

The Oertz Schooner.

The last Oertz development was the twin-engined flying-boat along tandem lines, which on completion in 1916 was officially termed "flying schooner." The design was based upon model tests by Professor Prandl at Goettingen, and the speed obtained was 115 kilometres per hour with motors mounted side by side. The Sopwith "Bat-Boat" influence in hull design and tail support will be noted. To improve the banking capacity, ailerons of Curtiss fashion were later mounted between the rear planes. The dimensions of this aircraft were: hull length, 102 m.; beam, 3.16 m.; span, 20 m.; surface area, 163 sq. m.; useful load, 1.25 tons; maximum speed, 118 km.p.h. The drive was by two propellers resting on separate bearers.

The appearance of the large British and American flying-boats in the North Sea caused, on their own statement, the Germans to start work on similar aircraft, two such flying-boats for twin 300-h.p. propulsion being commenced by the Brandenburg works in co-operation with Oertz, who had completed the hulls of 16.5 metres' length at the time of the armistice being signed.

* * *

PRATT'S SPIRIT.

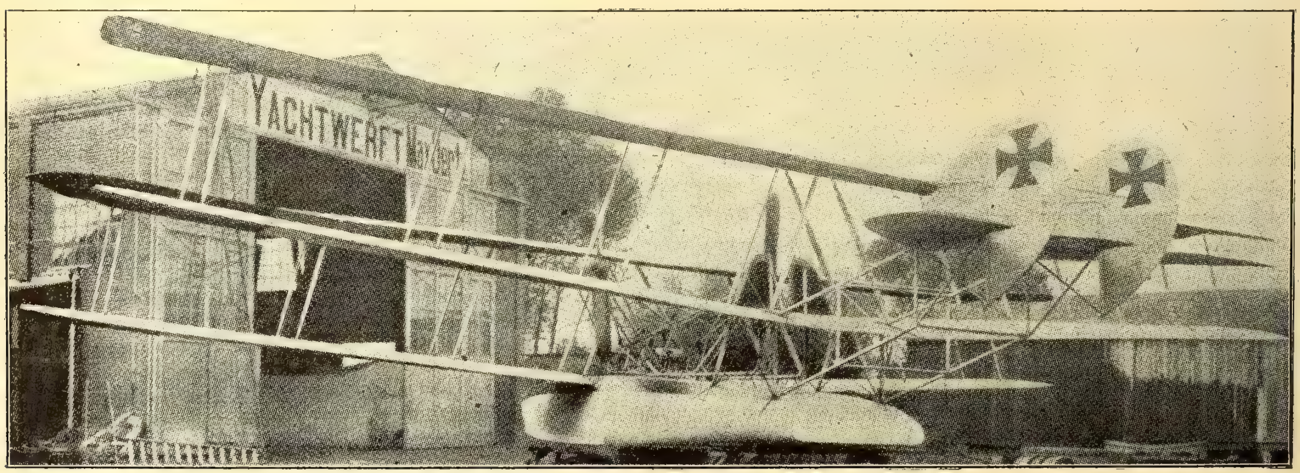
At the A.C.U. trials held recently, which were run from Llandrindod Wells, 10 gold medals and the Principality Cup were won by riders using Pratt's motor spirit.

J. SAMUEL WHITE & COMPANY, LTD.

It is officially announced that Mr. Frank Shearman, chairman and managing director of the Mount Stuart Dry Docks, Ltd., Cardiff, has been appointed to a seat on the Board of Messrs. J. Samuel White and Co., Ltd., the well-known shipbuilders and engineers of Cowes, Isle of Wight. Mr. Shearman is connected with several engineering and ship repairing establishments in South Wales, and is also chairman of the Times Shipping Co., Ltd., of Cardiff.

BARIMAR FOOTBALL CLUB.

The secretary of the Barimar Football Club requires fixtures for the coming season—both home and away—from October 11th onwards. Secretaries of medium teams with open dates are asked to communicate with Mr. W. Pritchard, care of Barimar, Ltd., 10, Poland Street, Oxford Street, W.1. Barimar ground adjoins Sudbury Town (Harrow) Station.



The 1916 Oertz Flying Schooner with two 240 h.p. Maybach engines.

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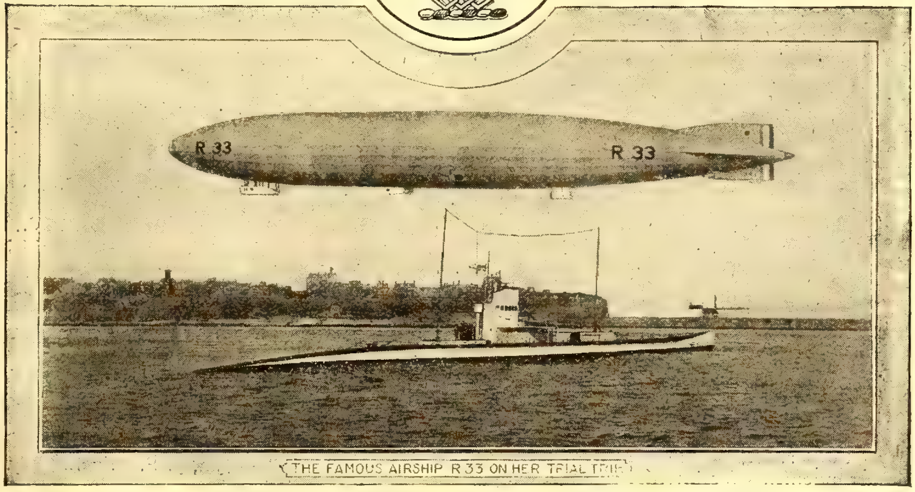

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TELEPHONE: VICTORIA 4010.

PATENTS INDEX

The subjoined list of recent inventions has been specially compiled by The Aeroplane from the current Official Patents Records.

Patents Applications.

Banks, E. C. Apparatus for transferring mails, etc., to aircraft whilst in flight. No. 18431. July 24th.

Ellis, F. A. Quilted aero fabric. No. 18506. July 25th.

Farren, W. S. Hinges for control surfaces of aircraft. No. 18328. July 23rd.

Gilbert, J. Propelling-mechanism for aeronautical machines, etc. No. 18121. July 21st.

Guest, J. B. H. Means for stabilising and controlling flight of aerial machines. No. 18440. July 24th.

Hathaway, A. H. Clinometers, etc., for aircraft No. 18562. July 26th.

Lang, A. A. D. Hydroplanes, etc. No. 18401. July 24th.

Law, E. A. Aircraft. No. 18386. July 24th.

McKellar, A. Means for ascertaining angle at which aeroplane, etc., is flying. No. 18564. July 26th.

Marter, C. Aeroplanes. No. 18603. July 26th

Roe, A. V. Seat supports. No. 18072. July 21st.

Roe, A. V. Hinge joints. No. 18073. July 21st.

Roe, A. V. Aeroplane fuselages. No. 18460. July 24th.

Roe, A. V. Aeroplanes. No. 18461. July 24th.

Sage and Co. Aircraft. No. 18232. July 22nd.

Sage and Co. Aircraft. No. 18344. July 23rd.

Saunders, S. E. Flying-boats. No. 18423. July 24th.

Schneider, J. J. M. A. E. Hinge for connecting warping-planes to wings or fixed planes in aircraft. No. 18240. July 22nd.

Sutherland, R. J. B. Aircraft for spraying purposes. No. 18332. July 23rd

Swan, P. S. Frames for airships of the rigid type. No. 18662. July 21st.

Taylor, J. Landing-stages or decks for aircraft. No. 18661. July 21st.

Bennett, H. Model aeroplane and seaplane. No. 18732. July 29th.

Bernini, A. Recognising aircraft by acoustic means and acoustic telegraphy between aircraft and earth. No. 18711. July 28th.

Dickie, R. M. Equilibrium indicators for aircraft. No. 18762. July 29th.

Green, J. F. Means for propelling aircraft. No. 18995. July 31st.

Higginbottom, J. Aeroplane and marine screw propellers. No. 18768. July 29th.

Hughes, E. B. Lighting-conductor for aircraft. No. 18751. July 29th.

Jeboult, W. A. Aerial and nautical navigation lights. No. 19004. July 31st.

Munyard, A. R. Balancing devices for aircraft. No. 18689. July 28th.

Raymond, J. A. L. Boats, hydroplanes, etc. No. 18702. July 28th.

Smith, J. Indicating-devices for aircraft. No. 18788. July 29th.

Spreekmeester, E. Propellers for ships, aeroplanes, etc. No. 19150. Aug. 2nd.

Vickers, Ltd. Aircraft. No. 18833. July 29th.

Complete Specifications Accepted, prints of which can be obtained on and after July 24th, 1919

128,659. Aug. 28th, 1917. Groves, S. E., and Ward, T. W. H. Dopes or varnishes used in aeroplane construction.

128,663. Aug. 29th, 1917. Brown, E. E., and Mooney, D. J. Metal construction for aircraft.

128,669. Aug. 30th, 1917. Calthrop, E. R. Parachutes.

128,671. Aug. 31st, 1917. Bramwell, F. H. and Sunbeam Motor Car Co. Observation apertures for aircraft.

Complete Specifications Accepted, prints of which can be obtained on and after August 7th, 1919.

129307. Oct. 5th, 1907. Macgregor, A. A. Gyroscopic indicating-apparatus for use in steering aircraft.

129315. Oct. 3rd, 1917. Parnacott, A. E. Means for lowering captive stationary balloons or airships

129316. Oct. 11th, 1917. Fowler, H., Wilkinson, G. S., and Pitt, A. G. Lubrication arrangements for internal combusition engines for aeronautical and other purposes.

129317. Oct. 12th, 1917. Blackburn Aeroplane and Motor Co., Booth, H., and Copley, J. W. Deck flying wheels, trucks, or trolleys for aeroplane flying-machines and other aircraft.

129318. April 21st, 1917. Soc. du Carburateur Zenith. Carburetters more particularly intended for aircraft motors.

129319. Oct. 13th, 1917. Blackburn Aeroplane and Motor Co., Booth, H., and Mills, A. E. Improvements in or connected with aircraft particularly relating to carrying guns thereon.

129320. Oct. 15th, 1917. Saunders, H., and Alexander H. Petrol and oil tanks particularly suitable for aeroplanes and other aerial machines.

129322. Oct. 17th, 1917. Sopwith Aviation Co., and Sopwith, T. Radiators for the water-cooling systems of internal combustion engines employed on aircraft.

129329. Oct. 19th, 1917. Calthrop, E. R. Means for destroying aerial craft.

129332. Oct. 23rd, 1917. Nieuport and General Aircraft Co., Hall, H. L., and Sharp, C. A. Method of and means for applying dope or the like to the surfaces of parts of aircraft.

129335. Oct. 24th, 1917. Blackburn Aeroplane and Motor Co., Booth, H. and Copley, J. W. Controlling-mechanism of aeroplane flying-machines.

129338. July 2nd, 1918. Page, F. H. Means for driving the pumps and other auxiliary services on aircraft.

129353. Oct. 29th, 1917. Bloxam, A. G. Aircraft propeller.

129359. Oct. 31st, 1917. Blackburn Aeroplane and Motor Co., and Booth, H. Carrying weights, such as merchandise, petrol, and the like, on aeroplane flying-machines.

129362. Nov. 1st, 1917. Constantinesco, G. Means for transmitting impulsive forces, especially for actuating gun-triggers on aircraft.

129369. Nov. 6th, 1916. Pelterie, R. Esnault. Tanks of aircraft.

129378. Nov. 10th, 1917. Boyle, E., and Payze, A. Means for mounting guns on aeroplanes.

129416. July 5th, 1918. Mears, F. C. Parachutes for use with aeroplanes.

129436. July 10th, 1918. Blackburn Aeroplane and Motor Co., and Thornton, A. C. Controlling devices primarily intended for internal-combustion engines, and particularly applicable for use on aircraft.

129441. July 11th, 1918. Blackburn Aeroplane and Motor Co., Booth, H., and Petty, G. E. Control devices for aircraft.

129457. July 17th, 1918. Little, J. R. Locking or supporting means for doors or partitions for aircraft sheds and like structures.

129528. Oct. 3rd, 1918. Fesselet, A. E., Bonnot, J., Belot, A., Vassallo, J., Emery, R. Multiplane heavier-than-air flying-machines.

129530. Oct. 3rd, 1918. Clowes, G. Apparatus for adjusting or testing the inclination or incidence of aeroplane wings.

129555. Dec. 14th, 1918. Woodward, J. W. W. Aeroplane toy.

129586. May 8th, 1918. Barbarou, M. J. B Carburetters for aviation engines.

129596. March 1st, 1919. Mooney, D. J., and Emby, D. H. Construction of metal cross-members, ribs, and the like for aviation.

Complete Specifications Accepted, prints of which can be obtained on and after August 14th, 1919.

129666. Nov. 19th, 1917. Boyle, R., and Payze, A. Fin and like operating surfaces of aeroplanes.

129672. Nov. 20th, 1917. Rapson, F. L. Means for propelling aeroplanes and other aircraft.

129673. Nov. 20th, 1917. Highgate Aircraft Co., and Hellers, F. Spars for aircraft.

129682. Aug. 14th, 1916. Letford, E. Means for supporting radiators on aeroplanes.

129681. Aug. 12th, 1916. Letford, E. Controlling gear for aeroplanes.

129683. Aug. 17th, 1916. Letford, E. Connecting members for assembling and mounting aeroplane parts.

129684. Sept. 18th, 1916. Letford, E. Control mechanism for motors for aviation apparatus.

129687. Nov. 26th, 1917. Avery, W. and T., and Bolas, H. Planes of aircraft.

129688. Nov. 26th, 1917. Avery, W. and T., and Bolas, H. Seaplanes or aeroplanes.

129696. Nov. 28th, 1917. Roe, E. A. V., Parrott, R. J., and Roe and Co., A. V. Hinged stabilising planes on aerial craft.

129698. Nov. 28th, 1917. Cellon, Ltd., and Barr, A. J. A. W. Means for doping aeroplane and like fabrics.

129705. Nov. 30th, 1917. Saunders, S. E. Alighting gear for aircraft.

129711. Oct. 22nd, 1915. Soc. Anon. des Ateliers d'Aviation, L. Bréguet. Ropes, wires, or shrouds of airships, aeroplanes, and the like.

129713. Feb. 1st, 1917. Aircraft Manufacturing Co., Havilland, G. de, and Chapman, J. S. Fuel supply pumps for aeroplane engines and the like.

129714. Dec. 5th, 1917. McGruer, E. Manufacture of aerial propellers.

129719. Dec. 7th, 1917. Blackburn Aeroplane and Motor Co., and Booth, H. Apparatus for indicating deviation in the direction of travel of aircraft.

129723. Dec. 8th, 1917. Mayrow, J. J. Frame members of aeronautical machines.

129727. Dec. 10th, 1917. Lanchester, F. W. Lateral plumb indicator for aircraft.

129732. Dec. 13th, 1917. Adams, H. E. F. Goold, and Collins, S. L. Balloons and the like.

129781. July 12th, 1918. Boulton and Paul, and North, J. D. Control devices for aircraft.

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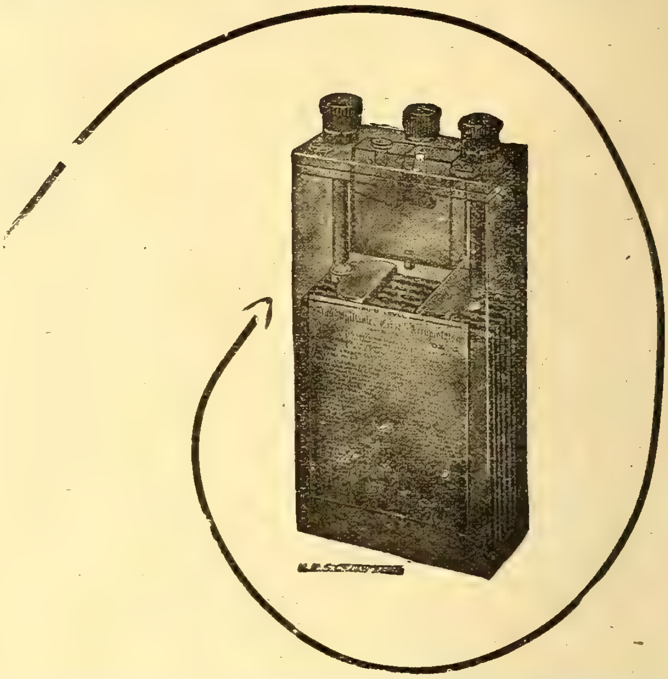

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On Sept. 30th M. Sadi Lecointe, fresh from his brilliant attack on the speed records, made the first trials of the Blériot giant biplane at Buc. So far as is known the trials were satisfactory. This "aerobus" is designed to carry twenty-eight passengers, and is fitted with four 300-h.p. engines. The speed is said to be roughly 90 miles an hour. The engines are started by a compressed-air device.

The Paris-Melbourne Flight.

M. Poulet, who intends to attempt a flight from Paris to Melbourne on a twin-engined Caudron biplane, left Issy-les-Moulineaux on Oct. 12th at 9 a.m. on the first stage of the flight. The prevalence of fog made him return half an hour later. At 10.30 a.m. he again made a start, but after flying 30 miles decided that the weather conditions were entirely unfavourable and so returned to Issy.

The Homologation of Records.

The Commission Sportive Aeronautique of the Aero Club de France has homologated the following height records for submission to the Fédération Aeronautique Internationale.

Pilot alone. Issy les Moulineaux, June 14th, 1919. By Lieut. Casale. Height, 31,230 ft.

Pilot and one passenger. Issy les Moulineaux, Aug. 8th, 1919. By Maurice Walbaun. Height, 24,836 ft.

Pilot and one passenger. Villacoublay, Aug. 13th, 1919. By Jacques Weiss. Height, 29,528 ft.

This last record was made on a Breguet biplane, the engine of which was fitted with a Rateau turbine.

The Coupe Deutsch.

The third and last prize (amounting to 20,000 francs), under the terms of the Coupe Deutsch de la Meurthe (Circuit de Paris) is now open to competition between Oct. 13th, 1919, and Oct. 13th, 1920. The following entries have already been received by the Aero Club de France.

Sadi Lecointe on a Spad-Herbemont biplane (300 h.p. Hispano-Suiza).

Maurice Rost on a Gourdon Leseurre monoplane (180 h.p. Hispano-Suiza).

Soc. des Etab. Nieuport. Two entries. Bernard de Romanet on a Nieuport biplane (300 h p. Hispano-Suiza), and M. Jansen on a Nieuport monoplane (180 h.p. Le Rhöne).

The course over which the contest will take place is the Chateau de Saint Germain—Senlis—Meaux—Melun—Chateau de Saint Germain.

A Woman Airship Pilot.

Mlle. Gaby Morlay, a well-known actress, has now passed the tests for her certificate as an airship pilot. She is the first woman to whom an airship certificate has been issued.

The Paris Salon de l'Aeronautique.

From a correspondent :—

The greater number of British firms exhibiting at the Salon have applied so late for space that they are more likely to be given stands in the annexe than in the main building.

The Prix Peugeot.

On Sept. 8th M. Poulain made another attempt to win the Prix Peugeot on his "Aviette," but as the Nieuport firm in rebuilding the machine had in mind the previous accident and made the later edition far too heavy, the inventor failed in his attempt. As in France it is necessary to be successful if one is to commit illegalities with impunity, M. Poulain has now been summoned to appear in court on a charge of riding his machine to the public danger in a park.—J. S

A M. Baligant has entered an aviette of his own design for the Prix Peugeot. It is pedal driven with a large body and a tractor airscrew.

A Memory of M. Garros.

On Oct. 4th, Fréjus, Saint Raphael, and Nice held ceremonies in memory of M. Roland Garros, the anniversary of whose death in action it was. He had been educated principally in the Lycée at Nice. A wreath was laid by the Nieuport Company at the foot of the statue of Garros in Fréjus. At Saint Raphael the Aero Club de Nice placed a wreath on the statue which marks the point of departure of Garros' cross-Mediterranean flight. At both these places the school children took part in the ceremonies.

The Dedication of a Chapel to Aviators.

A chapel dedicated to aviators, and to be called "Notre Dame de l'Air," was consecrated on Oct. 6th at Val d'Or, near Paris, by the Bishop of Versailles.

M. de Chardonnais represented the Aero Club de France at the ceremony.

GERMANY.

A Flight in the "Bodensee."

Mrs. George Renwick recently made a flight in the Zeppelin "Bodensee" from Berlin to Friedrichshafen. The following extracts from her account of the flight are taken from the "Daily Chronicle" of Oct. 10th :—

"Mrs. Renwick reached the Staaken aerodrome at 8.30 a.m. in a motor-car. The journey took about 40 minutes from Unter den Linden

"Each of the 24 passengers is allowed 30 lb. of free luggage and as much over at 2s. per lb. as they care to take. This luggage is drawn up by ropes into the hold amid-ships. The passengers have to climb up a step-ladder, set against the cabin under the fore-part of the airship, and on entering the cabin find themselves in a car similar to a Pullman but of greater width. There are mica windows, armchairs upholstered in velvet, and red wicker basket chairs.

"When Mrs. Renwick reached the shed, a motley crowd of some 50 men and boys were hanging on to the ropes of the airship, which was held down by these ropes and could be manœuvred about very easily.

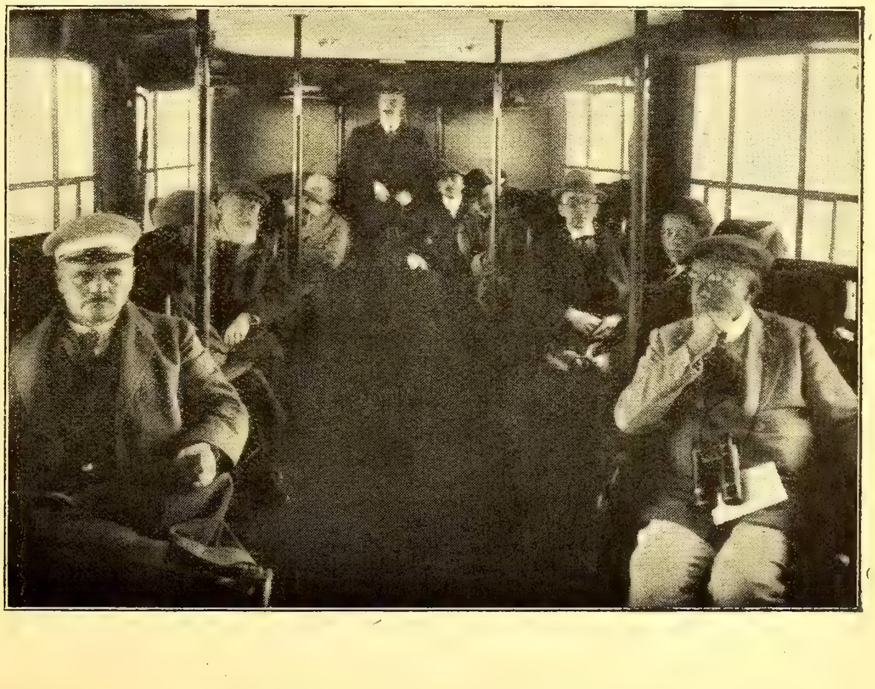
"At 9 o'clock the 'Bodensee' was backed out into the open. After some whistling a figure in a sort of naval uniform waved his arms, and shouted 'Hoch,' which, in that case, meant 'Let go.' The airship rose slowly and got under weigh; the forward motion could hardly be felt, although the flying speed was 70 or 80 miles an hour. At 10.30 a.m. they arrived over Leipzig.

"Lunch was served on the journey and consisted of various savouries and cold meats at from 12s. to 15s. per head. Rhine wine and champagne were to be had to drink. Altogether, the luncheon cost rather more than two guineas

"The journey takes place over lovely country, which, from the land, looks very much like parts of the Sussex Downs and Devon.

"Lake Constance was reached in seven hours at an average speed of 65 miles an hour. Another motley crowd pulled the

A View of the Passenger Cabin of the new Zeppelin Commercial Airship "Bodensee," which has recently been touring Northern Germany and Scandinavia. The ship was built at the Zeppelin Works at Friedrichshafen for the Hamburg-Amerika Steamship Company, which thus becomes the first steamship line in the world to own an airship. As usual, Germany sets the example of enterprise to British commercial firms, for, so far, no British steamship firm has acquired an airship, and only one or two have had the foresight to investigate the possibilities of aircraft of any kind.



airship down by its ropes on arrival, and the figure in naval uniform took visible and very audible command. The 'Bodensee' was then lightly manœuvred into a vast shed until the time came for the return voyage to be made."

The "Bodensee Service.

The Italian correspondent of The Aeroplane writes :—

The Zurich papers announce that a wireless telephone station is now working at Nuremberg, and has given interesting results, keeping in communication with the passenger airship "Bodensee," which carries on a regular service between Friedrichshafen and Berlin, and vice versa, for a distance of 140 kilometres. This is surely the first one has heard of German progress in this direction.

A new airship in construction by the Zeppelin works is to improve the present time taken on this trip to four hours each way, very convenient for Swiss business men.—T. S. H.

The Air Service to Sweden.

"Bodensee 2," the first airship belonging to the German Luftreederie, arrived at Stockholm from Berlin on Oct. 9th, with 16 passengers. The machine returned on the same day with a further party of people.

HOLLAND.

The Hague Aviation Ground.

The Rotterdam correspondent of the "Times" stated in their issue of Oct. 9th that many applications have been received from Germany to arrange the aviation ground which is to be established at The Hague. British firms ought not to neglect the opportunity to compete.

Memories of E.L.T.A.

Some notes by Mr. Kenworthy appeared under the above heading last week. One inadvertently omitted to state that the whole of the work done by the Blackburn "Kangaroos" was carried out under the control of the North Sea Aerial Navigation Co., Ltd., a company which is in close relation to the Blackburn Aeroplane and Motor Co., Ltd. The arrangements were organised by Major Veal, who has for some time been manager of the former company.

ITALY.

The Italian correspondent of The Aeroplane writes :—

A Transatlantic Flight.

One hears tales of a shortly-to-be-attempted crossing of the South Atlantic from Dakar to Brazil by aeroplane. Olivero, who was attached to the Baracca Squadron, is said to be organising the flight.

A Flight to Poland.

Poland is receiving many visits from Italian flying men on business bound. A few days back the Ansaldo Co.'s Ing. Brezzi was flown to Warsaw on a "300," piloted by Stoppani, taking four hours and 40 minutes to reach that capital from Turin. Lieut. Mainardi escorted the "300" on a Balilla. The return trip is planned *via* Posen, Berlin, Prague, and Vienna.

An Important Dinner.

The Aero Club of Italy, backed up by the Association of Aviators and Aeronauts, who are very much alive at their headquarters in the Galleria Nazionale at Turin, were to feast several of the directors of the Fiat and Ansaldo flying-machine departments, also the pilots, Brack-Papa and Stoppani, on 10th inst. Decorations were to be conferred. Decisions as to the line of action of the Italian trade at the Brussels Conference were likely to be arrived at during the evening.—T. S. H.

JAPAN.

H.I.M. the Emperor of Japan has presented 500,000 yen (£50,000) to the Imperial Aero Club for the purpose of civilian aviation, and a like amount has been raised by the Club. An American, who requested that his name might be kept confidential, has also given 180,000 yen for the training of Japanese aviators.

The officers of the Club are as follows : Honorary President, Prince Kuni; President, Count Okuna; first Vice-President, Baron Sakatani; second Vice-President, General Nagaoki.

An aerial mail service between Tokio and Osaka, a distance of 300 miles, will be operated under the supervision of the Club.

There is a great interest in aeronautics among the Japanese, but the difficulty in obtaining machines is proving a handicap.

SWEDEN.

A German Seaplane Service.

The Svensk Lufftransport Bolaget, which possesses a German Sablatnig seaplane, which is in the harbour at Barkarby, are advertising passenger flights and goods transport from Stockholm to Finland. Their machine flew over the city on Oct. 2nd dropping bills to that effect. A Swedish gentlemen interested in the concern is on his way to England to purchase a few English machines with which to carry out this service

Promise and Performance.

The German, Lieut. Ebner, who has a machine at Gothenburg which is owned by Direktor Rammf, started out to fly to Malmo on Oct. 2nd, but was forced to land on the way. Everyone is getting very sick of Mr. Ebner, as he never succeeds in getting anywhere and seldom starts at all.

Would-be Agents.

A representative of a British aviation firm has recently left Sweden. Several more or less bankrupt flying companies tried to persuade him to make them the firm's agents.

The Nordioka Aviatik Bologet has two machines fitted with 90 h.p. Mercédès engines in a shed on the Barkarby Aerodrome. They have not been flown for over a year, and look to be only fit for "reduction to produce."

SWITZERLAND.

The Italian correspondent of The Aeroplane writes :—

Flying-boat Activity.

Flying-boat stations at Lugano and at Locarno, in the Swiss waters of the Lakes Lugano and Maggiore, are now in working order. At the former station the Swiss pilot, Taddeoli, who was for a long time working for the Italian S.I.A.I. firm, is giving exhibitions and organising flights with passengers.

Switzerland, with only about 100 pilots, and many of them abroad, ought to be a good place for hydro-aeroplane joy-rides, the country being mostly water and mountains.

Flying Permit Difficulties.

From Lausanne on Lake Geneva some noise has been made over the appointment of (Capt.) Eric Bradley as manager of that flying school. The Swiss Military Authorities seem to have been unable to grant him a flying permit without recognising him as an officer of a foreign Power.

Some fear of establishing a precedent which would mean an influx of German and Italian ex-military pilots into Switzerland appears to have been behind it all.

Aerial Postage Stamps.

A special 50-centime stamp is now issued to frank letters on the Zurich-Berne-Lausanne-Geneva aeroplane service.—T. S. H.

UNITED STATES OF AMERICA.

The Aerial Mail Services.

The Washington-New York air mail service obtained 100 per cent. efficiency for the month of August. Although many bad storms were encountered during the month, every machine made its scheduled flight each day.

Twenty-six flights were made each way. An average of 350 lb. of mail was carried on each flight, or a total of 18,200 lb. for the month.

The average speed made was 90 m.p.h., and the average flying time between the two cities was 2 hr. 25 min.

The fastest flight was made Aug. 13th, when Pilot Merrill K. Riddick carried 342 lb. of mail from New York to Washington in 1 hr. 55 min., at an average speed of more than 113 m.p.h.

Mr. Otto Praeger, the Second Assistant Postmaster-General, recently sailed from New York to Cuba. During his visit he hoped to make the preliminary arrangements for a flying-boat mail service between Florida and the West Indies.

The Cuban Government is anxious to see the aerial mail communication started. Mr. Praeger is considering proposals from several private enterprises which are now operating between Key West and Havana.

While at New York Mr. Praeger visited the plant of the L.W.F. Engineering Co., where a number of mail aeroplanes are being built to carry 3,000 lb. of cargo for the New York-Chicago service.

The Post Office Department are adopting a synthetic fuel and developing a fire extinguishing liquid which can be injected into the tank in case of fire. Tests have proved that industrial alcohol can be obtained for the same price as high grade petrol, and that it will prove to be 20 per cent. more efficient.

[One takes leave to doubt the chemistry of this statement. —Ed.]

Mr. Praeger said that within the next few weeks they expected to fly the mail between Cleveland and New York without making an emergency stop at Bellefonte, Pa.

Fourteen big cargo aeroplanes are under construction in New York, Cleveland, and Ithaca, and are expected to be in the service early this winter. The L.W.F. mail machine will have sleeping quarters for the crew of three men, besides the 3,000 lb. of letter mail. The other machines are being built by the Glenn L. Martin Co. and Thomas-Morse. They will be slightly smaller than the L.W.F. aeroplanes.

With these machines in operation it is said that the Post Office Department will save one and a half million dollars a year over the present cost of first-class mail transportation.

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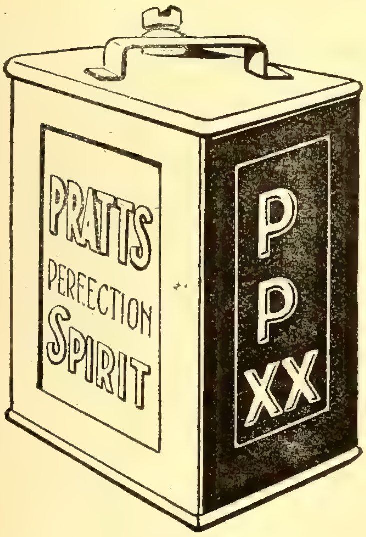

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Summary of First Seven Weeks' Flying.

August 25th, 1919, to October 11th, 1919.

Flights Scheduled	102
Flights accomplished	99
Prevented by weather	1
Interrupted by weather	1
Interrupted by mechanical defect	1
Number of Miles flown	24,750

The following is an official summary of the weather flown through during these seven weeks.

Days favourable for flying	11
„ unfavourable for flying	21
„ noted officially as "unfit" for flying	10

The attention of Bankers, Merchants, and firms which have houses both in London and Paris is again drawn to the unique facilities afforded by this service, which permits urgent documents, express goods, or passengers to be transported the 250 miles between London and Paris in an average time of 2¼ hours. The service, which has been operating daily since August 25th, has been started in order to demonstrate that, with the use of skilled pilots and fast machines, such an express air service can now be run with sufficient reliability to afford a definite, daily convenience to the business world.

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PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysees.

THE AUSTRALIAN FLIGHT.

On Wednesday, October 15th, Capt. George Campbell Matthews, Aust. F.C., and Sergt. Tom Kay, Aust. F.C., both Australians, hope to leave Hounslow, weather permitting, for Australia. The flight will be made in accordance with the rules of the Australian Government's competition.

The machine is a Sopwith "Wallaby" fitted with a Rolls-Royce "Eagle VIII" 375-h p. engine. This machine has a maximum speed of 121 m.p.h., a cruising speed of 107 m.p.h. at 5,000 ft., and a cruising range of 1,500 miles. No wireless is fitted as this was not considered a necessity.

Captain Matthews, who is thirty-six years of age, has spent twelve years at sea in the mercantile marine as a practical navigator, and holds an extra-master's certificate.

On the outbreak of war he was acting as chief officer of a passenger steamer off the Australian coast, but he at once left and joined the Australian Light Horse as a trooper. He received his commission in Gallipoli, and subsequently served 2½ years with that force at the Dardanelles and also in Egypt. He joined the R.F.C., and took his pilot's certificate in February, 1917, afterwards proceeding out to France with the 1st Australian Scout Squadron, No. 68, in September. After three months in France he returned to England and was promoted to Flight Commander in No. 4 Australian Scout Squadron, which was then flying Sopwith "Camels." When the Australian Training Wing was formed in England Captain Matthews went to it as Wing Examiner.

He has flown some twenty-one different types of machines, his long maritime experience having proved of the greatest value to him in the air. It is interesting to note that he expects to navigate his aeroplane on this long voyage exactly as though it were a ship. For this purpose he has had his own navigation instruments made for him by Hughes, and is employing his own methods of compass correction. Captain Matthews has an intimate knowledge of the Malay Archipelago, the Celebes Island, and other islands of the Pacific.

Sergeant Kay, Aust. F.C., who is accompanying Capt. Matthews, is not himself a qualified pilot, but whilst waiting to start Capt. Matthews has trained him in the management of the Sopwith "Wallaby," so that he can act as a relief pilot.

The route which Capt. Matthews and Sergeant Kay are to take is roughly as follows :—

Over France, Italy, Greece, then across the Mediterranean to Egypt; through Mesopotamia, along the north coast of the Persian Gulf to Karachi; then across India to Calcutta; down the Malay Peninsula, landing at Rangoon and Singapore, and on to Batavia; then along the Dutch East Indian Islands to Timor, and finally to Port Darwin, which is one of the most northerly coast towns in Australia. The distance totals about 12,000 miles. The longest sea passages are the 300 miles across the Mediterranean and the 400 miles from Timor to Australia.

Under favourable conditions, Captain Matthews hopes to average about 90 miles an hour whilst in the air, but he will not fly more than about five hours per day.

The Air Ministry have given all possible facilities in connection with their establishments on the route to India, and beyond that point dumps of fuel have been established at 500-miles intervals by the Shell Marketing Co., and the Wakefield Oil Co.

According to the terms of the Australian Government £10,000 Prize, the maximum time allowed is 30 days, but, as Captain Matthews points out, he is, as a member of the Larkin-Sopwith Company of Australia, far more interested in demonstrating the utility of the single-engined aeroplane for long distance flights of this character than in winning the cash prize, although he will do his best to win it.

Captain Matthews and Serjeant Kay.

A GERMAN FATHER'S REQUEST.

The following letter has been received :—

Sir,—I appeal to the chivalrous feeling of the British Royal Flying Corps, or of other persons in putting forward the following request :—

If any readers of The Aeroplane should be able to give me some information regarding the fate or the whereabouts of my son and only child, as up to now I cannot obtain any news or hear anything about him.

My son, Albert Hets, born on March 5th, 1896, at Hamburg, Lieutenant of the Reserve, belonging to the German Air Squadron 37, is missing. He participated in an air-fight on Sunday, Aug. 11th, 1918, about midday near Chaulnes (west of the Somme, France), between the German Air Squadron 34 and 10 English De Havilland two-seaters, and it is supposed that he came down behind the English lines.

It is very likely that he has been wounded or killed in or after this action, or became prisoner of war, and with the possibility that he may have lost his mind.

My son was flying on a one-seater Fokker marked by a red ring round the black body and by a black and white striped tail. The number of his Fokker was 712/18 Fokker D.VII. The number of the motor was 41,960. The number of the machine-guns were 7,381 and 6,341.

I shall feel very grateful to receive any information whatever about my son.

(Signed) Albert Hets.

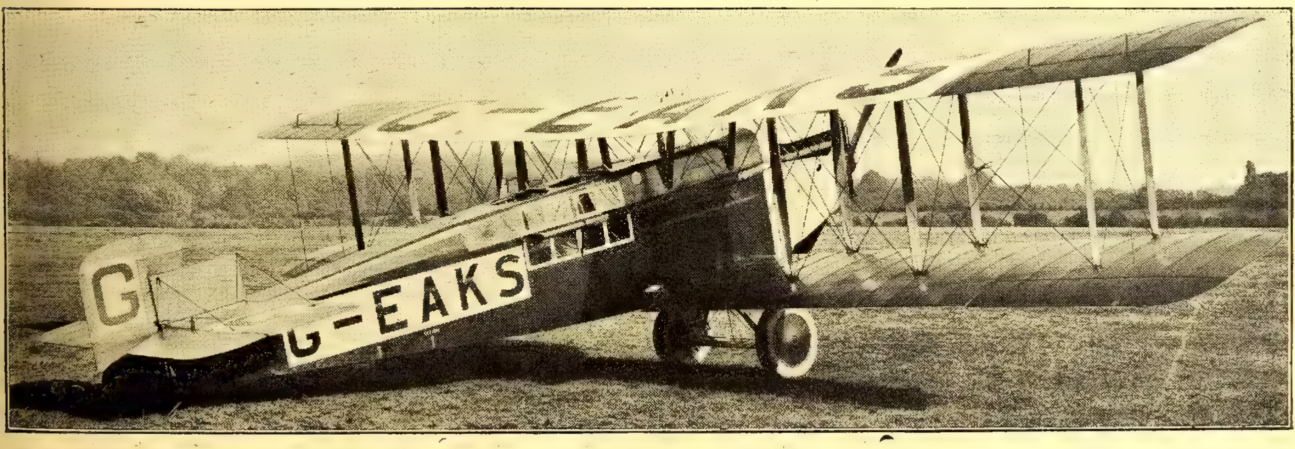
Holtystrasse, 14 (Uhlenhorst), Hamburg (Germany).

A FORTHCOMING DINNER.

The dinner for officers of D Squadron, No. 2 Wing, R.N.A.S., which was postponed owing to the strike, will be held at the Restaurant Frascati on Friday, Oct. 24th. For further particulars please apply to Captain J. A. Yonge, D.F.C., The Eastbourne Aviation Co., Eastbourne.

THE CASE OF MISS DOUGLAS-PENNANT.

The committee appointed by the House of Lords to inquire into the dismissal of Miss Douglas-Pennant from the command of the W.R.A.F. met on Oct. 14th at the House of Lords. Sir Edward Carson, K.C., has given up his brief for Miss Douglas-Pennant owing to his political engagements. Mr. J. A. Hawke, K.C., will now lead for her, with Mr. Stuart Bevan, K.C., and Mr. Buchanan.



The Sopwith "Wallaby" Biplane (375 h.p. Rolls-Royce) built for the England-Australia Flight

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

War Office, September 26th.

Regular Forces.—Royal Regiment of Artillery.—R.H. and R.F.A.—Col. E. B. Ashmore, C.B., C.M.G., M.V.O., is placed on the h.p. list, Sept. 1st.

Infantry.—Ches. R.—Lt. S. A. Harper, M.C. (attd. R.A.F.), resigns his commn., July 27th.

R. Suss. R.—Lt. A. W. Simon (attd. R.A.F.) resigns his commn., Sept. 27th.

Durh. L.I.—Lt. J. B. Tait (attd. R.A.F.) retires, receiving a gratuity, Sept. 27th.

Overseas Forces.—Canada.—2nd Cent. Ont. R.—Temp. Capt. A. G. Peace relinquishes his commn. in the O.M.F. of C. on appt. to a permanent commn. in the R.A.F., July 31st.

Manitoba R.—Temp. Capt. E. R. Williams ceases to be secd. for duty with the R.A.F., Sept. 8th.

Brit. Columbia R.—Temp. Lt. (actg. Capt.) L. de S. Duke, D.F.C., ceases to be secd. for duty with the R.A.F., June 21st.

1st Central Ontario R.—The following temp. Lts. cease to be secd. to the R.A.F. :—J. J. Bennett, W. B. Ferrier, Sept. 10th.

Territorial Force.—Infantry.—16th Bn. Lond. R.—Sec. Lt. L. C. Pallett to be Lt., and to remain secd., R.A.F., March 26th.

War Office, September 27th.

Regular Forces.—Infantry.—Ches. R.—The date of the resignation of his commn. by Lt. S. A. Harper, M.C. (attd. R.A.F.), is Sept. 27th, and not as in "Gazette" of Sept. 26th.

Memorandum.—Temp. Hon. Lt.-Col. A. H. Burgoyne relinquishes his commn. on completion of service, July 1st, and retains hon. rank of Lt.-Col.

War Office, September 29th.

Regular Forces.—Establishments.—R.F.C.—Mil. Wing.—Equipment Officer, 3rd Class.—Temp. Sec. Lt. C. F. Bushnell, Serv. Bn., R. War. R., and to be transferred to R.F.C., Gen. List, Sept. 4th, 1917 (substituted for notification in "Gazette" of Sept. 13th).

War Office, Sept. 30th.

Regular Forces.—Royal Engineers.—Field Coys.—Capt. R. H. Parkinson (Hon. Maj., R.A.F.) relinquishes his commn. on account of ill-health contracted on active service, Oct. 1st, and retains rank of Capt.

Overseas Forces.—Canada.—Canadian Cavalry.—Temp. Lieutenant R. S. Mackenzie ceases to be secd. for duty with R.A.F., Sept. 21st.

Brit. Colombia R.—Temp. Maj. F. J. S. Murray, ceases to be secd for duty with the R.A.F., Sept. 21st.

War Office, Oct. 2nd.

Territorial Force.—Hampshire Aircraft Parks.—Lt. C. L. Cleburne resigns his commission, March 9th.

War Office, Oct. 3rd.

Regular Forces.—Establishments.—R.F.C.—Mil. Wing.—Schools of Instrn.—School of Mil. Aeronautics.—Instr. (Graded as an Equip. Officer, 1st Class.)

The notification regarding Lt. (temp. Capt.) R. O. C. Bush, R. Dub. Fus., in the "Gazette," May 17th, 1918, is cancelled.

Infantry.—S. Wales Bord.—Lt. C. Patteson, M.C., A.F.C. (attd. R.A.F.), resigns his commn., Oct. 4th.

K.R. Rif. C.—Lt. C. H. S. Ackers (attd. R.A.F.) resigns his commn., Oct. 4th.

Service Batts.—High. L.I.—Temp. Capt. J. H. N. H. Burke resigns his commn. on appt. to R.A.F., May 1st, 1918.

Territorial Force.—Infantry.—5th Bn., R. Suss. R.—Capt. F. W. Napper is secd. with the R.A.F., April 24th, 1918.

War Office, Oct.. 4th.

Territorial Force.—Infantry.—4th Bn., Gord. Highrs.—Sec. Lt. G. Thomson (Sec. Lt., R.A.F.) to be Lt., and to remain secd. R.A.F., Dec. 27th, 1918.

War Office, Oct. 7th.

Regular Forces.—Overseas Forces.—Canada.—Manitoba R.—Temp. Lt. J. Whitford relinquishes his commn. in the O.M.F.C. on being granted a permanent commn. in the R.A.F., Aug. 15th.

War Office, Oct. 9th.

Territorial Force.—Infantry.—13th Bn. Lond. R.—Qrmr. and Capt. A. Ridley resigns his commn. on transfer to the R.A.F., May 13th, 1918.

General List.—Infantry.—Qrmr. and Capt. A. T. Hughes resigns his commn. on transfer to the R.A.F., April 1st, 1918. Qrmr. and Lt. D. A. Childs resigns his commn. on transfer to the R.A.F., April 1st, 1918. Qrmr and Lt. G. A Hutchinson resigns his commn. on transfer to the R.A.F., April 1st, 1918.

Territorial Force Reserve.—Infantry.—Qrmr. and Lt. P. J. Burns resigns his commn. on transfer to the R.A.F., April 1st, 1918.

AIR FORCE.

Air Ministry, September 30th.

R.A.F.—Permanent Commissions.—The following are granted permanent commns in the ranks stated with effect from Aug. 1st :—Sqdn. Leader E. J. C. Roberts, Flt. Lt. R. G. Parry.

The notifications which appeared in "Gazette" of Aug. 1st appointing the following officers to permanent commns. are cancelled :—Maj. R. F. Stapleton-Cotton (T.), Capt. G. Allen (A.), Capt. E. P. Hardman, D.F.C. (A.), Capt. A. L. McFarlane (A.), Capt. L. H. T. Sloan (A.), Capt. R. B. Tomlinson (T.), Lt. D. G. McGregor, A.F.C. (O.), Lt. G. S. Peffers, D.F.C. (A).

The surname of Maj. W. A. McClaughry, D.S.O., M.C., D.F.C. (A.), is as now described, and not "McLaughry," as in "Gazette," Aug. 22nd.

The rank of Sqdn. Leader W. C. Hicks, A.F.C., is as now described, and not "Wing Commander," as stated in "Gazette," Sept. 26th.

The following temp. appt. is made :—Staff Officer, 3rd Class.—(Air).—Flt. Lt. C. F. Gordon, O.B.E., M.C., Sept. 18th.

Group Capt. (Staff).—Group Capt. A. M. Bent, C.M.G., C.B.E., relinquishes grading for purposes of pay and allowances as Air Commodore, Sept. 15th.

Flying Branch.—Sec. Lts. to be Lts :—F. de M. Hyde, April 13th; D. O Onslow-Carleton, May 8th

H. V. N. Bankes (Lt., R.E.) is granted a temp. commn. as Sec. Lt. (O.), April 24th, 1918, and to be Hon. Lt.

The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. J. C. Bowstead, D.C.M., M.M. (Lt., Norf. R.), April 9th; Lt. H. B. Mason (Lt., R.A.), April 30th; Lt. D. P. F. Uniacke (Lt., R. Irish Rif.), May 12th; Sec. Lt. P. J. A. Fleming, June 3rd (substituted for notification in "Gazette," June 13th); Lt. T. M. Draper, June 12th; Lt. A. W. Davison (Lt., Wilts R.), June 13th (substituted for notification in "Gazette," Aug. 5th), Sec. Lt. (Hon. Lt.) H. W. Blakeney, M.C. (Lt., R.E.), Sept. 5th; Lt.-Col. E. T. R. Chambers, A.F.C. (Lt.-Comdr., R.N.), Sept. 8th; Capt. J. G. Selby, M.C. (Capt., R.H. and R.F.A.), Sept. 15th; Lt. G. D. Gillie (Lt., E. Ont. R.), Sept. 21st (substituted for notification in "Gazette," May 27th); Lt. E J. H. Douch (Lt., R.G.A.), Sept. 22nd; Lt. A. W. Frazer (Sec. Lt., S. Wales Bord.), Sept. 23rd.

The following are transferred to the unempld. list :—Capt. C. W. Baldwin, Jan. 24th; Capt. E. P. Will, A.F.C., Jan. 31st; Sec. Lt. W. E. Cane, Sec. Lt. W. V. Creaghan, Sec. Lt. E. S. Grant, Sec. Lt. H. McC. Morden, Feb. 1st; Lt. F. Crossley, Feb. 7th (substituted for notification in "Gazette," July 1st); Capt. C. E. S. Lusk, Feb. 24th; Lt. J. Bursey, Feb. 25th; Sec. Lt. G. A. F. Prentice, Sec. Lt. F. E. Smith, March 1st; Lt. M. H. Winkler, March 10th; Lt. A. S. Mills, March 19th; Sec Lt. R. G. Walton, March 21st; Lt. T. L. McConchie, March 23rd; Sec. Lt. H. H. Wilson, March 30th; Lt. L. P. McHugh, March 31st; Lt. (actg Capt.) E. S. Coler, D.F.C., April 1st; Sec. Lt. T. H. Wright, April 6th; Sec. Lt. J. Mackintosh, April 13th (substituted for notification in "Gazette," June 24th); Lt. C. R. Duggan, April 25th; Sec. Lt. (Hon. Lt.) G. A. R. Slimming, May 3rd (substituted for notification in "Gazette," July 15th); Lt. N. C. Dixie, May 4th; Sec. Lt. J. B. Whitehouse, May 9th; Lt. W. Anderson, Sec. Lt. D. P. Jones, May 10th; Sec. Lt. F. C. Hinksman, Lt. G. F. Thompson, May 15th; Lt. K. Johannesson, Sec. Lt. W. R. Thomson (substituted for notification in "Gazette," June 20th), May 20th; Lt. J. H. Cathcart, May 22nd; Lt. W. S. Jenkins, D.F.C., Sec. Lt. D. B. Johnstone, May 23rd; Sec. Lt. H. W. Coverley, Lt. C. C. McDonald, June 1st; Lt. G. A. Drewitt, June 3rd; Capt. E. B. Harvey, June 11th; Lt. F. P. Magoun, June 13th (substituted for notification in "Gazette," Jan. 11th); Sec. Lt. O. C. Jensen, June 16th; Sec. Lt. W. Bradley, Sec. Lt. K. C. Brown, July 10th; Sec. Lt. L. G. Bolton, Sec. Lt. J. I. Buirski, Sec. Lt. A. D Butler, July 11th; Sec. Lt. D. F. Barber, Sec. Lt. C. F. Bennett, Sec. Lt. G. H. Bond, Lt. J. S. Boult, Sec. Lt. G. F. Boulton, Sec. Lt. G. E. Bradley, Sec. Lt. L. T. Bradley, Sec. Lt. E. Brady, Sec. Lt. J. C. B. Brady, Sec. Lt. J. D. Brine, Sec. Lt. D. H. Brown, Lt. F. E. Brown, M.C., Sec. Lt. W. R. Buchanan, Sec. Lt. D. F. Burr, Sec. Lt. D. L. Butchart, Sec. Lt. K. K. Johnson, Sec. Lt. G. A. Johnston, Sec. Lt. T. F. Sanderson (substituted for notification in "Gazette" of July 29th), Lt. J. Sangster (substituted for notification in "Gazette" of July 29th), Lt. D. W. Saunders (substituted for notification in "Gazette" of July 29th), Sec. Lt. A. B. Smith (substituted for notification in "Gazette" of July 25th), July 12th; Lt. W. J. Barber, July 17th; Sec. Lt. P. J. Bayly, July 23rd; Sec. Lt. L. Buckley-Bridge, July 25th; Sec. Lt. C. Beviss, Lt. E. L. Johnson, July 29th; Pilot Officer E. Brandt, Aug. 12th; Flying Officer M. à B. Boyd, Aug. 15th; Pilot Officer J. L. Bowie, Aug. 16th; Flying Officer R. S. De Bruyn, D.F.C., Pilot Officer J. S. Shannon, Aug. 19th; Pilot Officer W. MacInnes, Aug. 20th; Pilot Officer J. B. Jamieson, Aug. 25th; Flying Officer V. L. Sage, Aug. 27th; Flying Officer L. Harper, Aug. 28th; Flying Officer J. G. Bertrand, Pilot Officer C. C. Briggs, Flying Officer H. Hillier, D.F.C., Pilot Officer O. A. Johnson, Pilot Officer G. B Noble, Aug. 29th; Pilot Officer E. T. F. Brown, Flt. Lt. J. A. Yonge, D.F.C., Sept. 3rd; Flying Officer E. Birch, Sept. 4th; Pilot Officer C. L. Hurst, Sept. 6th; Pilot Officer J. N. Bitton, Pilot Officer E. Cooke, Sept. 9th; Flying Officer F. F. Bramwell, Flying Officer A. J. Fricker, Pilot Officer C. W. C. Peene, Sept. 10th; Flying Officer J. Durston, Flying Officer A. Newman, M.C., D.F.C., Flying Officer A. E. Woodbridge, Sept. 11th; Pilot Officer A. B. McDonald, Sept. 12th; Flying Officer F. G. Harlock, Flying Officer G. W. R. Pidsley, Sept. 13th; Flying Officer G. Budden, Flying Officer J. W. Rhodes, Sept. 14th; Pilot Officer W. H. Basker, Flying Officer T. A. Byers, Flying Officer W. E. Clarkson, Flying Officer J. F. T. Fenn, Flying Officer F. B. Ford, Flying Officer C. H. J. Holden, Flying Officer E. Martyr, Pilot Officer (Hon. Flying Officer) C. J. Rhind, Flying Officer W. F. Robertson, Pilot Officer W. R. Wolsey, Pilot Officer R. T. E. Wood, Sept. 15th; Flying Officer (Hon. Flt. Lt.) F. C. Barrell, Pilot Officer L. E. Headley, Pilot Officer W. J. Highnett, Flying Officer T. H. Mercer, Pilot Officer H. O. Williams, Flt. Lt. F. R. R. Woodward, Sept. 16th; Pilot Officer E. Barker, Sept. 17th; Flying Officer G. T. C. May, Sept. 19th; Flying Officer G. H. Willows, A.F.C., Sept. 24th; Pilot Officer C. A. Campbell, Flying Officer H. G. Jackson, Flying Officer G. W. Northridge, Flying Officer J. Officer, Pilot Officer G. S. J. Payne, Flying Officer G. A. Wrigglesworth, Sept. 29th.

Lt. R. Coop relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Aug. 9th (substituted for notification in "Gazette" of Aug. 8th).

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—H. P. Brumell (caused by wounds), July 7th; A. B. MacDonald (caused by wounds), Aug. 13th; W. M. Hall, J. Rhodes (W. Yorks R.), Oct. 1st.

The surname of Sec. Lt. A. F. Belyea is as now described, and not "Beyles" as stated in "Gazette" of July 2nd, 1918.

The notification in "Gazette" of Sept. 3rd, 1918, concerning H. T. Daniel is cancelled.

The notification in "Gazette" of Nov. 29th, 1918, concerning J. W. Lavoie is cancelled.

The notification in "Gazette" of Dec. 31st, 1918, concerning Sec. Lt. H. Clarke is cancelled.

The notification in "Gazette" of Jan. 28th concerning Sec. Lt. J. S. Ford is cancelled

The notification in "Gazette" of March 11th concerning Sec. Lt. D. A. Jones is cancelled.

The notification in "Gazette" of April 1st concerning Sec. Lt. (Hon. Lt.) A. Mills, D.F.C., is cancelled.

The notification in "Gazette" of May 9th concerning Sec. Lt. J. E. H. Chadwick is cancelled.

The notification in "Gazette" of May 27th concerning Sec. Lt. W. Anderson is cancelled.

The notification in "Gazette" of June 13th concerning Sec. Lt. P. J. A. Fleming is cancelled.

The notification in "Gazette" of July 1st concerning Lt. C. C. Miller is cancelled.

The notification in "Gazette" of July 29th concerning Sec. Lt. H. A. Thompson is cancelled.

The notification in "Gazette" of Aug. 5th concerning Lt. A. W. Davison is cancelled.

Administrative Branch.—Sec. Lt. H. Clarke to be Lt., June 19th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Lt. O. Dunkerley (Paymr. Sub-Lt., R.N.), Sept. 29th, 1918; Lt. J. A. V. Duff (Lt., Rif. Brig.), May 20th; Lt.-Col. J. W. L. Hunt (Lt.-Comdr., R.N.), Sept 5th.

To All Users of Motor Spirit

There are adequate stocks of Motor Spirit in the country to meet ALL requirements.

In the absence of railway transport the difficulty is to get the motor spirit into the hands of those that need it for food distribution and other essential national needs.

The Distributing Companies are confident that this can be done with the co-operation of the public and the trade.

The distribution by motor spirit transport to garages, etc., must be discontinued, all such motor transport being required for the purposes already indicated.

Dealers and commercial consumers requiring motor spirit must therefore call at the local depots of the Distributing Companies and bring with them all empty packages available, as supplies of full packages will be limited to the number of empties returned.

The hoarding of motor spirit, or the use of it by those who do not really require it during the railway strike, is contrary to the public interest.

The Distributing Companies much regret the inconvenience caused, which they hope will not be of long duration.

The Cosmos Engineering Co., Ltd.—builders of the 14-cylinder, 315 h.p. "Mercury" engine—exclusively use and recommend Castrol "R" for lubrication of the above engine and also with their 450 h.p. "Jupiter."

Lubricated with Castrol "R" a "Mercury" engine fitted to a Bristol Scout, achieved the best climbs in the official tests—10,000 feet in 5 mins. 25 secs.; 20,000 feet in 16 mins. 15 secs. These figures, checked by official barograph records, constitute British records.

C. C. WAKEFIELD & Co., Ltd.
Wakefield House, Cheapside,
London, E.C. 2.

The following are transferred to unempld. list :—Lt.-Col. (actg. Col.) J. Attenborough, C.M.G., Lt. I. McL. Black, Feb. 24th; Lt. (actg. Capt.) J. B. Love, April 15th; Sec. Lt. W. A. Youngman, April 17th; Lt. G. A. Mitchell, May 16th; Sec. Lt. L. B. Raymond, June 12th; Sec. Lt. H. F. Bezeau, Lt. B. S. Johnston, July 12th; Lt. B. J. Kirchner, July 24th; Pilot Officer A. E. Webb, Sept. 3rd; Pilot Officer H. W. Croft, Sept. 9th; Flying Officer N. T. Berrington, Flying Officer A. E. Gill, Sept. 12th; Pilot Officer J. G. Ramsay, Sept. 13th; Flt. Lt. L. E. Innes-Baillie, Sept. 14th; Pilot Officer H. Clayton, Sept. 15th; Flying Officer A. H. Hepworth, Sept 16th; Pilot Officer H. B. Bull, Sept. 17th; Flying Officer H. W. E. Smith, Sept. 19th.

The following Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank :—H. C. R. Milward, Sept. 17th; A. H. Lancaster, Sept. 19th.

Sec. Lt. G. M. M. Clune relinquishes his commn. on account of ill-health, and is granted rank of Lt., Aug. 7th.

Lt. M. J. J G Mare-Montembault, M.C. (N. Som. Yeo.), relinquishes his commn. on account of ill-health contracted on active service, April 10th.

Lt. J. B. Tait (Lt., Dur. L.I.) resigns his commn., Oct. 1st.

Sec. Lt. W. J. Washer relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 7th.

TECHNICAL BRANCH.—Lt. R S. Haward to be Lt., Grade (B), from (A), April 4th, 1918.

Sec. Lts. to be Lts. :—(Hon. Lt., actg. Capt.) L. W. Allen, and to retain actg. rank of Capt. until April 30th; (Hon. Lt.) C. Bishop (without pay and allowances prior to Feb 15th), April 2nd.

Sec. Lts. to be Lts. without pay and allowances of that rank :—W. Hallet-Carpenter, Aug. 2nd, 1918; A. S. G. Smith, June 12th, 1918; A. H. Varian, Nov. 22nd, 1918 (substituted for notification in "Gazette" of July 29th); J. E. McCrea, July 28th.

Sec. Lt. (Hon. Lt.) W. J. G. Barnes (Lt., R. Scots Fus.) relinquishes his commn. on ceasing to be empld., Sept. 11th.

The following are transferred to unempld. list :—Sec. Lt. (Hon. Lt.) F. C. Butler, M.B.E., May 15th; Sec. Lt. B. K. Sagar, May 17th; Pilot Officer H. E. Brain, Squdn. Ldr. A. V. Thompson, Sept. 3rd; Wing Comdr. C. A. Kirby, Sept. 8th; Flt. Lt. B. M. Iles, Sept. 11th; Flying Officer H. J. Barwick, Sept. 12th; Flying Officer W. E. Lowe, Sept. 13th; Flying Officer W. Gawkrodger, Sept. 14th; Flying Officer J. G. Harriott, Flying Officer G. S. Wood, Sept. 15th; Flying Officer J. E R. Avery, Flying Officer R. T. Murchison, Sept. 16th; Pilot Officer N. H. Knock, Flying Officer C. G. Walton, Sept. 17th; Flying Officer (actg. Flt. Lt.) A. W. Brittain, Sept. 18th.

Sec. Lt. J. S. Forde relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Jan. 29th.

The notification in "Gazette" of May 24th, 1918, concerning Lt. R S. Haward is cancelled.

MEMORANDA.—Lt. W. J. E. Owen is granted the hon. rank of Capt., Aug. 31st, 1918.

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—105349 C. A. Kenway, 273005 H. R. Scott.

The following Cadets are granted hon. commns. as Sec. Lts. :—181440 S. W. Stevens, 181529 A. E. L. Spacie, Jan 18th; 182476 G. A. Bloomfield, Jan. 21st; 87865 E. R. George, 106319 G. D. Pratt, Jan. 30th; 183175 H. E. Bosworth, Feb 8th; 28054 E. Gartside, Feb. 11th; 97149 E. W. Hylton, Feb. 15th; 255194 L. S. Morris, March 1st; 175064 W. N. Lister, March 3rd; 45890 A. Mitton, March 20th; 175040 F. G. Bull, April 8th; S/6666 J. H. Payne, April 11th; 250617 J. L. Fletcher, April 23rd; 175284 J. L. Makin, May 1st; 175579 E. E. Clarke, 176932 A J. G. Cordery, May 4th; M2/032856 C. H. Stant, May 9th; 538319 C. Hitchings, May 23rd; 24034 C R. Bealey, May 30th; 18119 H. W. Lane, May 27th; 240766 F. E. Brooks, June 12th; 159388 C. A. Woollett, July 1st; 56143 T. E. Simmons, July 22nd.

Lt.-Col. R G. Cherry, M.C. (Maj., R. Regt Art.), relinquishes his commn. on ceasing to be empld., Sept. 15th.

The following temp. Hon. Lts relinquish their commns. on ceasing to be empld. :—F. W. Hedgecock, Aug. 20th; H. Bedson, Sept. 16th.

The following are transferred to unempld. list :—Flying Officer S. T. Smith, from (S.O.), Sept. 13th; Flt. Lt. L. Henshall, M.B.E., from (S.O.), Sept. 15th; Flying Officer C. T. Inman, from (S.O.), Flying Officer T. T. Pickup, from (S.O.), Sept. 16th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—E. Earl, P. E. B. Holliwell, Oct. 1st.

The notifications in "Gazette" of Sept. 23rd concerning Lt. F. W. Hedgecock are cancelled.

The notifications in "Gazette" of Sept. 23rd concerning Lt. H. Bedson are cancelled.

The notifications in "Gazette" of June 10th concerning the following Overseas Cadets are cancelled :—177683 W. H. Bushe, 184151 J. Cavill, 184005 T. N. Clarke, 184516 S. R Harrison, 183859 F. H. Harford, 183653 L. P. Lyne, 180499 C. L. Melbye, 183886 T. W. Mills, 182236 M. D. Miller.

AIR MINISTRY, Oct. 3rd.

R.A.F.—PERMANENT COMMISSIONS.—The undermentioned are granted permanent commns. in the ranks stated, with effect from Aug. 1st :—Wing Comdr. W D Beatty, O.B.E., Sqdn. Ldr. B. H. N. H. Hamilton, D.S.O., Flt. Lt. R. D. Oxland. The initials of Flt. Lt. P. E Maitland are as now described and not "P E. M." as stated in "Gazette" of Sept. 26th.

The following temp. appt. is made :—Staff Officer, 2nd Class (P.).—Sqdn. Ldr. E. M. Murray, D.S.O., M.C., Sept 25th.

FLYING BRANCH—Sec. Lt C. C. Loretto is granted the hon. rank of Lt., Sept. 19th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. J. E. H. Chalwick (Sec. Lt., Manch R.), Feb. 21st; Lt. J. B. P. Phillips (Lt., R. West Surr R.), Sept. 8th; Lt. R. C. Hartland-Rowe (Lt., Leinster R.), Sept. 12th; Sec. Lt. (Hon. Lt.) C E. C. Penny (Lt., R. Fus.), Sept. 16th; Sec. Lt. (Hon. Maj.) F. J. S Murray (Maj., Brit. Col. R.), Sept. 21st.

The following are transferred to unempld. list :—Sec Lt. F. W F. Turner, Jan. 14th; Sec. Lt. A. W. Rowe, Jan 25th; Sec. Lt. L. P. Ashley, Sec. Lt. J. L. Baird, Sec. Lt. R. L. H. Barber, Sec. Lt J. J. Batchelor, Sec. Lt. L. C. R. Batten, Sec. Lt E E. Buckerfield, Sec. Lt. E. De Lorme, Sec. Lt P. R. Dunn, Sec. Lt. V. A. Grant, Sec. Lt R. T. Jackman, Sec Lt. C. A. D. Jennings, Sec Lt. S. F. S. Jones, Sec. Lt. E. P. Kelly, Sec. Lt. M. L. F. Lawrence, Sec. Lt. D. J M. Leck, Sec. Lt. E. W. T. Lee, Sec. Lt. G. E. Lloyd, Sec. Lt N. P. Lockwood, Sec. Lt. V. W. Shaughnessey, Sec. Lt. L. E. Snowden, Feb. 1st; Lt. C. H. Archer, Feb. 15th; Sec. Lt. E. T. Brownscombe, Feb. 24th; Sec Lt. R. L. Stevenson, Feb. 27th; Sec. Lt. W. E. Lewis, March 1st; Sec. Lt. A. E. Popham, March 6th; Sec. Lt. P. W. Scott, March 7th; Sec Lt. A. G. Colvin, March 15th; Lt. M F. Peiler March 24th; Sec. Lt. E. G. Ralph, April 2nd; Lt. W. R. Eastman, April 15th; Sec. Lt. J. S. Ford, Sec. Lt. W. W. R. Watson, April 20th; Lt. J. H Jenning, April 25th (substituted for notification in "Gazette" of July 22nd); Capt. G. E. Nash, May 1st; Sec. Lt. L. MacK. Johnston, Sec. Lt. (Hon. Lt.) A. Smith, May 8th; Sec. Lt. R. N. Webster, Sec. Lt. M. J. H. Weir, Sec. Lt. R. V. Weston, Sec. Lt. E. A. Westwood, May 20th; Lt. G. W. Doolittle, May 30th; Lt. W. G. Westwood, June 13th; Lt. F. W. Wells, June 14th; Sec. Lt. J. M. Loggie, June 30th (substituted for notification in "Gazette" of July 1st); Lt. J. B. White, D.F.C., July 3rd; Lt. E. C. Johnston, D.F.C., July 7th; Sec. Lt P. H. Bernard, Sec. Lt. G. H. Campbell, Sec. Lt. B. M. Carter, Sec. Lt. E. D. Valiant, Sec. Lt. J. W. Vaughan, Sec. Lt. F. W. Weatherdon, Sec. Lt. J. L. White, Sec. Lt. W. E. White, July 12th; Sec. Lt. A. R Miles, July 17th (substituted for notification in "Gazette" of Aug. 12th, wherein this officer was described as Sec. Lt. A. B. Miles); Sec. Lt. H. C. W. Weston, July 25th; Lt. W. A. W. Carter, July 31st; Pilot Officer J. Brown, Flying Officer F. C. Scott, Aug. 1st; Flying Officer W. J. B. Nel, Flying Officer R. W. Weatherby, Aug. 7th; Pilot Officer J. E. E. Owens (substituted for notification in "Gazette," Aug. 12th, wherein this officer's initals were shown as "E. E."), Pilot Officer S. B. Trites, Pilot Officer L. Weinburg, Aug. 10th; Flying Officer G. D. Tod, Aug. 11th; Pilot Officer G. V. Wales, Aug. 12th; Pilot Officer M. L. P. Chapman, Aug. 16th; Flying Officer G. A. Wells, M.C., Pilot Officer E. Wilson, Aug. 20th; Flying Officer N. H. Barlow, Aug. 21st; Pilot Officer J. T. Brown, Pilot Officer P. V. Dobby, Pilot Officer B. E. J. D. Tuke, Aug. 22nd; Flying Officer C. G. H. Wadleigh, Flt. Lt. H. F Wright, Aug 23rd; Pilot Officer G. L. Kaye, Pilot Officer H. Simon, Pilot Officer E A. Slater, Pilot Officer C. H B. Stevenson, Flying Officer F. Tymms, M.C., Flying Officer B. S. Wilcox, D.F.C., Aug. 26th; Pilot Officer H. D. Butler, Pilot Officer F. J. Shrive, Aug. 27th; Pilot Officer C. K. Carter, Flt. Lt. E. D. Crundall, Flying Officer W. G. Woods, Aug. 28th; Flying Officer V. R. Brown, Pilot Officer H. Tornquist, Flying Officer G. B. Whitney, Flying Officer N. A. Thompson, Aug. 29th; Flying Officer F. A. Ayrton, Aug 31st; Flying Officer E. M. Henderson, Flying Officer L. H. Short, M.C., Flying Officer P. Wilson, M.C., Sept. 1st; Flying Officer E. E. Ward, Flying Officer H. Whitworth, Sept. 3rd; Flying Officer J. H. Shaw, Flt. Lt. A. F. E. Warner, Flying Officer G. R. Whitaker, A.F.C., Sept. 4th; Flying Officer D. S. Anderson, Flying Officer D. C. Davies, Flying Officer D. P. Walter, Pilot Officer W. R. Wright, Sept. 5th; Pilot Officer (Hon. Flt. Lt.) E. F. Ambler, Flying Officer H. A. Whishaw, Sept. 6th; Pilot Officer (Hon. Flying Officer) A. C. Cook, Flying Officer A. Hutcheson, Sept. 7th; Pilot Officer E. G. Stevens, Pilot Officer A. G. Waite, Flying Officer F. V. Way, A.F.C., Sept. 9th; Pilot Officer J. Hyde, Flying Officer C. Morries, Sept. 10th; Flying Officer C. A. B. Beattie, Flying Officer G. Bliss, Pilot Officer (Hon. Flying Officer) R. Davie, Flying Officer J. E. Day, Flying Officer E. K W. Denton, Flying Officer W. F. J. Harvey, D.F.C., Flying Officer P. F. Hassett, Flying Officer A. C. Heaven, M.C., Flying Officer M. B. Joseph, Flying Officer H. D. Lewis, Flt. Lt. J. E. Scott, D.S.C., A.F.C., Flt. Lt. T. M. Southorn, Flying Officer R. A. Tarleton, Pilot Officer T. S. E. Whittaker, Pilot Officer W. L. Widgery, Sept. 12th; Flying Officer C. S. Goodfellow, M.C., Pilot Officer W. A. Saffery, Pilot Officer R. F. Tomlinson, Pilot Officer A. R. Webster, Sept. 13th; Pilot Officer W. L. Tuck, Flying Officer F. H. E. Woollett, Sept. 14th; Pilot Officer A. C. Bellinger, Flying Officer (actg. Flt. Officer) C. W. Bostock, Flt. Lt. A. E. Charlwood, Flying Officer H. V. Clark, Flying Officer J. Dymond, Flying Officer P. K. Glazebrook, Pilot Officer W. J. Goodey, Flying Officer C. N. Haines, Flying Officer G. I. Hole, Flying Officer E. E. Howard, Flying Officer E. R. Kerrison, Flying Officer P. A. H. Lalouette, Pilot Officer S. H. Mabbott, Pilot Officer T. L. Rose, Pilot Officer W. D. Sambrook, Pilot Officer G. B. Shillaker, Flying Officer J. R. Smith, Pilot Officer R. K. Stinson, Flying Officer K. G. Styles, Pilot Officer F. W. Syer, Pilot Officer W. E. Titchmarch, Flying Officer W. L. Woodman, Sept. 15th; Flying Officer W W. Inglis, Flying Officer J. McB. V. Sillars, Flying Officer J. T. Turner, Pilot Officer J. Warren, Sqdn. Ldr. H O. A. Westendarp, Sept. 16th; Flying Officer C. L. Adamson, A.F.C., Flying Officer R. E. Bright, Pilot Officer G. W. Butcher, Flying Officer H L. Madge, Flying Officer R M. Marsh, Flt. Lt J. A Pattern, Sept. 17th; Flying Officer J. L. W. Bacon, D.F.C., Flying Officer E. J. Crichton, Pilot Officer J. T. Newton, Pilot Officer G. N. P. Oates, Sept. 18th; Flying Officer D. D. Campbell, Pilot Officer (actg. Flying Officer) H. G. Pratt, Sept. 19th; Pilot Officer H. G. Warburton, Sept. 20th; Flying Officer F. P. Little, Pilot Officer H. C. Sherlock, Pilot Officer H. Stamp, Sept. 26th; Pilot Officer O. D. Alward, Flying Officer J. K. Blair, Pilot Officer H. G. Fraser, Flying Officer E. S. Meek, Pilot Officer R. T. Thacker, Sept. 28th.

The following Lts. relinquish their commns on account of ill-health and are permitted to retain their rank :—J. F. Hughes, Aug. 22nd; C. B. H. Lefroy (contracted on active service), Sept. 27th.

The following Lts. resign their commns. :—C. N. S. Ackers (Lt., K.R.R.C.), P. W. Rutherford, M.C. (Lt., W Yorks. R.), Oct 4th.

Sec. Lt. J. A Peterson relinquishes his commn. on account of ill-health and is permitted to retain his rank, Oct 4th

Sec. Lt. D. C. Fraser is removed the Service for absence without leave, June 4th.

The initials of Sec. Lt. G. C. Robinson are as now described and not "J. C." as stated in the "Gazette" of June 28th, 1918.

The initials of Sec. Lt. R. R. H. Taylor are as now described and not "R H." as stated in the "Gazette" of July 1st.

The surname of Sec. Lt. H. T. Barrett is as now described and not "Barnett" as stated in the "Gazette" of June 24th.

The surname of Lt. E. C. Burtin is as now described and not "Burton" as stated in the "Gazette" of June 24th.

The surname of Lt. A. Thomson is as new described and not "Thompson" as stated in "Gazette" of July 15th.

The notification in "Gazette" of June 18th, 1918, concerning Cadet W. F. Grainger is cancelled

The notification in "Gazette" of April 18th concerning Lt. J. J. Lanctot is cancelled.

The notification in "Gazette" of May 30th concerning Capt. E. R. H. Pollak, M.C., is cancelled.

The notification in "Gazette" of July 25th concerning Sec Lt. (Hon. Lt.) G. F. A Lewin, M.C., is cancelled.

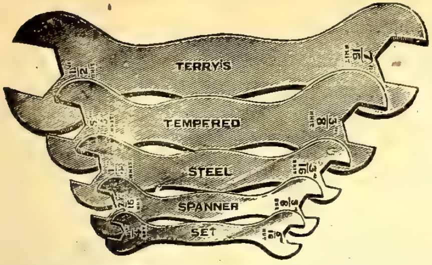
The notification in "Gazette" of July 29th concerning Sec. Lt. H. F. Skelton is cancelled.

The notification in "Gazette" of August 15th concerning Lt. H. C. Leavers is cancelled.

ADMINISTRATIVE BRANCH.—Following Sec. Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts. :- (Hon. Lt.) W. H. Hills, (Hon. Capt.) H. Milman, O.B.E. (to July 7th), (Hon. Lt.) S. U. Dent (to July 28th), May 1st; Sec. Lt. G. R. Biggs is graded for purposes of pay and allowances as Capt. whilst specially empld., from (A.), April 1st; Sec. Lt. T. Bathurst to be actg. Lt whilst empld. as Lt., Oct. 10th, 1918, to April 30th.

Following Sec. Lts. are graded for purposes of pay and allowances as Lts. whilst empld. as Lts. :—H Auliff, J. E. Elliott, R. W. Stoner T. H. Youens, May 1st; C. P. Andrews (to May 13th), E. H. Hebden-Phillips (to June 18th), L. P. Kirk (to June 26th), Sec. Lt. A. H. Jones relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt., July 11th

Sec. Lts. (A.) to be Sec. Lts. :—G. R. Biggs, April 10th; G. B. Demaine, H. W. F Rendall, April 17th.



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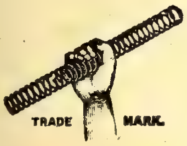

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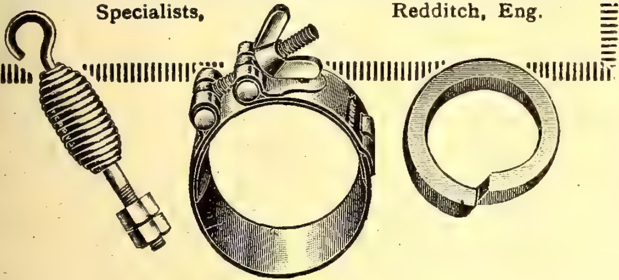

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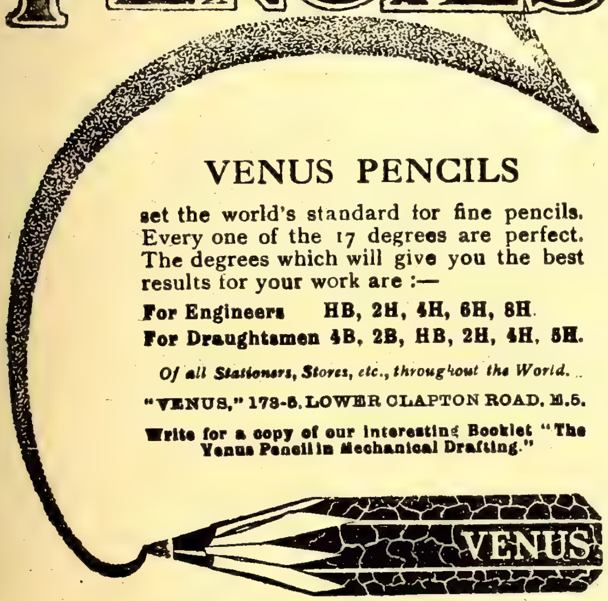

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Pilot Officers (A.) to be Pilot Officers:—F. G. Clarkson, Aug. 26th; J. M. Dandy, Sept. 1st.

Pilot Officer P. Gent to be Pilot Officer, from (S.O.), Aug 27th.

Sec. Lts. (O.) to be Sec. Lts.:—C. H. White, Jan 23rd; J. R Brown, Oct. 12th; (Hon. Lt.) W Miller, D.F.C, June 12th, and to be Hon. Lt

The following relinquish their commns. on ceasing to be empld.:—Lt. E. A. Aldhelm-White (Lt., Scots Guards), April 17th; Lt. C. F. C. Turner (Lt., Middlesex R.), Sept. 12th.

The following are transferred to unempld. list:—Sec. Lt. W. Smith, Jan. 15th; Capt. T. MacLeod, O.B.E., March 11th; Lt. G. Dolley, May 29th; Lt. J. R. M. Tweddell, June 14th; Sec. Lt. G. H. Weir, July 29th; Maj. J. G. A. Baillie, July 30th; Flying Officer R. G. R. Townsend, Aug. 25th; Pilot Officer J. C. Walker, Aug. 27th; Pilot Officer W. L. Wade, Aug. 31st; Pilot Officer J. S. Hill, Flying Officer F. J. R. Weaver, Sept. 3rd; Flying Officer A. E. Alderton, Sept. 4th; Flying Officer (Hon. Flt. Lt.) R. S. J. Bond-Andrews, Sept. 6th; Flying Officer J. A. Mackie, Flt. Lt. J. S. Shaw, Sept 9th; Flying Officer (Hon. Sqdn. Leader) A. J. Battine, Sept. 10th; Flying Officer J. R. Verel, Sept. 11th; Flying Officer (actg. Sqdn. Ldr.) F. V. Bell, Pilot Officer G. E. Shipp, Sept. 12th; Pilot Officer E. H. Brading, Pilot Officer C. J Sharles, Pilot Officer F. H. Tippett, Sept. 15th; Flying Officer A. H. Redfern, Pilot Officer J. A. Shipton, Sept. 16th; Pilot Officer (Hon. Flt. Lt.) A. K. O Cochrane, Flying Officer C. R. Pilcher, Pilot Officer H. O. Richards, Sept. 17th; Flying Officer A. L. Findlay, Flying Officer E. B. Selby, Sept. 18th; Flying Officer (Hon. Flt. Lt.) J. R. Croxford, Sept. 21th; Pilot Officer F. J. Prevost, Sept. 28th; Flying Officer N. E. S Simon, Oct. 1st.

Capt. G Mitchell (Capt. and Qrmr., Rifle Bde.) relinquishes his commn. on account of ill-health contracted on active service, Oct. 1st.

Lt. R. L. G. May (Lt., R. Fus.) resigns his commn. and is granted rank of Capt., Aug. 27th (substituted for notification in the "Gazette" of Aug. 26th).

Sec. Lt. (Hon. Lt.) R. Worton relinquishes his commn. on account of ill-health and is permitted to retain the rank of Lt., Sept. 25th.

Surname of Sec. Lt. (Hon. Lt.) C. A. Luce is as now described and not "Lace" as stated in the "Gazette" of June 24th

Notification in the "Gazette" of May 9th concerning Sec. Lt. C. W. Slarke is cancelled

The notification in the "Gazette" of Aug 29th to stand.

Notification in the "Gazette" of July 8th concerning Sec Lt. F. C. Hilbert is cancelled

TECHNICAL BRANCH.—Capt. E. P. Smyth to be actg. Maj. whilst empld. as Maj., Grade (A), from Aug. 1st, 1918, to Feb. 27th (substituted for the notification in the "Gazette" of Aug. 1st, wherein this officer's name was described as Capt. E. P. Smith).

Following Sec. Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (A):—W. E. Townsend, May 1st; A E. Faver, June 1st.

Following Sec. Lts. are graded for purposes of pay and allowances as Lts. whilst empld. as Lts., Grade (A):—C. R. Brown, from Feb. 3rd to July 21st; A. V. Baker, C. H. Bell, J. A. Joyce, E. Taylor, May 1st.

The following Sec. Lts are graded for purposes of pay and allowances as Lts. whilst empld. as Lts., Grade (B):—J. Dow, from March 4th to July 21st; (Hon. Capt.) F. O. Sonderbye, (Hon. Lt.) H. A. L. Way, W. Liniker (to July 31st), May 1st.

Sec. Lts. relinquish the grading for pay and allowances as Capts. on ceasing to be empld. as Capts., Grade (A):—E. F. Thorpe, June 30th; N. B. Hemsley, July 10th; Sec. Lt. (Hon. Lt.) G. F. Antell relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt., Grade (B), July 21st.

Pilot Officer D. M. Rees relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (A), Sept. 29th.

Pilot Officer J. Sutherland relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (B), Sept. 22nd.

Sec. Lts. relinquish the grading for pay and allowances as Lts. on ceasing to be empld.:—Lts., Grade (A):—C. H. N Nunn, May 13th; T. J. E. Thornton, June 30th; H. Williams, July 13th.

Pilot Officer W. St. J. Littlewood relinquishes the grading for pay id allowances as Flying Officer on ceasing to be empld. as Flying fficer, Grade (A), Sept. 17th.

Pilot Officers relinquish the grading for pay and allowances as lying Officers on ceasing to be empld. as Flying Officers, Grade (B):-(Hon. Flying Officer) H. Allsebrook, Sept. 5th; R. Fell, Sept. 8th; V. Walmsley, Sept. 13th.

Pilot Officer (actg. Flying Officer) C. Littlejohn relinquishes the ctg. rank of Flying Officer on ceasing to be empld. as Flying Officer, Grade (B), Sept. 18th.

Sec. Lts. (Ad.) to be Sec. Lts., Grade (A):—A. A. Mc Durrant, April 10th; (Hon. Lt.) G. F. A. Lewin, M.C., July 22nd, and to be Hon. Lt.; H. B. Brown, July 17th (substituted for the notification in the "Gazette" of Sept. 5th).

Pilot Officers (Ad.) to be Pilot Officers, Grade (B):—E. J. Newman, Sept. 18th; (Hon. Flying Officer) J. J. Galvin, Sept. 22nd, and to be Hon. Flying Officer.

Pilot Officer R. M. Thomas to be Pilot Officer, Grade (B), from (K.B.), Sept. 18th.

Sec. Lts. (Ad.) to be Sec. Lts., Grade (B):—H. J G. Male, Feb. 25th; (Hon. Capt.) F. O. Sonderbye, May 1st, and to be Hon Capt.

Sec. Lts. (late Gen. List, R.F.C., on prob.) are confirmed in rank as Sec. Lts., Grade (B):—R. A. Sibun, April 1st, 1918; T. M. O'Neill, Aug. 17th, 1918; Sec. Lt R. A. Sibun to be Sec. Lt., Grade A), from Grade (B), June 23rd.

The following relinquish their commns on ceasing to be empld.:—Sec. Lt. E. B. Flanagan, Jan. 11th; Lt. L. R. Staddon (Warrant Shipwright, R.N.), Sept. 11th.

The following are transferred to unempld list:—Lt. E H. Jones, April 1st; Capt. J. Jensen, June 24th; Sec. Lt. H. Whittaker, July 12th; Flying Officer A Shelley, Aug. 2nd; Flt. Lt. H. R. C. Adams, Aug. 3rd; Pilot Officer B. P. K Walsh, Aug 5th; Flying Officer A. V. Jones, Aug. 25th (substituted for notification in "Gazette" of Sept. 9th); Pilot Officer R. G. Hogg, Aug. 28th, Flying Officer F L. Steben, Aug. 29th: Pilot Officer J. Stewart, Sept. 1st; Flt. Lt. M. W. W. Cross, Flying Officer S. G. Elliott-Smith, Flying Officer V H C. Gayford, Flying Officer L. J. Pellatt, Sept. 8th; Flying Officer F. L. Barnett, Pilot Officer G. W. Denmark, Flying Officer F. L. Fletcher, Flying Officer J. C. Holmes, D.F.C., Flying Officer V. F Spureon, Pilot Officer O. N. H. Watson, Sept. 9th; Flying Officer R. P. Coulter,, Flt. Lt. A. R. Howard. Pilot Officer W. H. Spargo, Flying Officer F. H L. Varcoe, M.C., Pilot Officer C. G. Whitmore, Sept 10th; Flying Officer F. W. Beard, Flying Officer R O. Mullinger, Pilot Officer H D. Olson, Sept. 13th; Flt. Lt. J. J. James, Flying Officer J. W. Lawlor, Sept. 15th; Pilot Officer D. Scrimgeour, Sept. 16th; Pilot Officer W. G. Browne, Pilot Officer E. J. Cox, Flt. Lt. B. G. McCormick, Sept 17th; Sqdn. Ldr. C. F. Abell, O.B.E., Flt. Lt. E. J. Castell, Pilot Officer (Hon. Flying Officer) F. H R. Law, Flt. Lt. K. R. Paterson, Sept. 20th; Flt Lt. J. W. C Dobbyn, Sept. 21st.

Notification of Sept. 10th, 1918, concerning Lt. T. M. O'Neill is cancelled.

Notification of Jan. 10th concerning Sec Lt. E. B. Flanagan is cancelled.

MEDICAL BRANCH.—Lt.-Col. N. H. Harris (Surgn. Comdr., R.N.) relinquishes his commn on ceasing to be empld., Sept. 19th.

The initials of Capt. J. I. Russell are as now described and not "J. R." as stated in "Gazette" of Nov. 26th, 1918.

DENTAL BRANCH.—Flying Officers to be Flt. Lts.:—A. C. S. Cottam, Sept. 21st; H. O. Salt, Sept. 23rd.

MEMORANDA.—H. W. Morgan (Capt., ret. pay, Army), late Capt. (actg. Maj.), R.A.F., is granted the rank of Maj., Oct. 4th.

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases:—226515 E. A. Allan, 535952 E. Anderson, 535414 W. J. Angrove, 435823 F. C. Atkinson, 200061 H. Aish, 50441 A. Barlow, 65008 J. E. Berkin, 180437 J. A Burchett, 706783 E E. Butler, 226209 W. W. Callam, 129614 T. Carmichael, 874096 W. Cassop, 687633 H. M. Cassidy, 911811 C. C. Cave-Brown-Cave, 524083 E. J. Church, 5071 R. A. Clark, 502764 E. T. Cockrell, 739324 N. Cole, 166158 A. R. Coleman, 4692 W. A. Corbett, 142187 A. H Couse, 507603 R. S Crowell, 315868 R. A. Crysler, 540406 E. H. Cotterell, 475425 R. C S. Davenport, 1003355 C. Depew, 91539 F. C. Dinner, 2004306 J. H. Doige, 109316 G. V. Drew-Brook, 75029 J. A. Driscoll, 427706 R. Ellis, 242 O. R. Evans, 154 M. J. Feeheery, 1078043 J. Flockton, 507363 W. H. Floyd, 166765 W. H. Fox, 303062 L. S. Fraser, 65346 P. Fuller, 243067 J. J. Gauthier, 922728 L. B. Gibson, 2368376 C. P. Grizelle, 430974 D. M. Goudie, 77040 C. A. Gill, 77097 F. E. Guest, 110215 G. W. Hadrill, 174054 W. R. Hendry, 529579 W. Hill, 75149 F J. Hale, 114579 E. R. Hall, 503165 J. R. Hamilton, 207677 C. H. Hendry, 880772 A. Herbert, 690363 W. B. Jeakins, 760215 F. Jones, 3106323 H. I. Kellond, 177247 M. J. Kelly, 2353313 E. C. Larose, 2517332 E. R. Lloyd, 117354 R. Lewis, 1045056 G. Y. Masson, 504285 W. E. Masters, 2178 H. A. Moate, 505903 J. V. McAllister, 904168 E. G. McArthur, 461268 C. A. McCrae, 167063 J. A. McDonald, 766034 R. R. McIntosh, 475509 F. J. McLean, 192053 P. G. Newall, 240175 H. A. Parker, 1003389 N Pawson. 2327439 McKay E. Pritchard, 18681 G. Range, 628572 C. M. Richards, 540245 J Robertson, 500460 S Rowles, 84182 F. W. Rogers, 14887 R A. Russell, 5754 P. McAllister Simms, 402198 W. Sapsworth, 622800 C. I. Stewart, 37220 P. Shiels, 1434483 C. R. Seal, 429713 W. C. Strang, 302965 A. Scott, 460632 G. Taylor, 200187 G. C. Terpenning, 349163 S. A. Terroux, 228090 L. E. Thompson, 6616 K. Tyrie, 2003592 N. F. Usher, 264180 M. Van Gene, 41662 G C. Waite, 797543 J F. C. Wark, 2498452 C. J. Wilkins, 7807 A. Winslow, 706835 G. T. Winter, 681211 A. Warnes, 109182 G. O. Williams, 2134943 W. A. Woodman.

Cadets granted hon commns. as Sec. Lts.:—534951 J. J Ashton, 44269 F. Bennett, 41255 L. J. M. Burgess, 4692 S. Ball, 55805 M. Block, 393990 T. Beckett, 767491 A. A. Booth, 7547 O. T. Curtis, Feb. 24th; 240554 L. W. Alexander, M/176695 F. Booth, S/014637 S. Boyce, 515528 J. A. C. Brown, S/255236 F. F. Ball, 42909 A T. Brown, 81310 E. M. Clarke, 40943 H. V. Cook, S/126597 C. Curtis, 12652 J. Carey, 145170 S Cox, H/310367 G. Cross, 835996 F. Cotten, 3708 J. H. Davis, M2/034589 G. Dickin, 143204 R. L. Doidge, 76788 G. H. Drewry, 25679 J. Davenport, 305225 R. A. Davis, 220350 R. E. Davis, Feb. 25th; 3618 H. F. Barrett, MS/4570 H. Brown, 91604 R. Badger, 203793 C. E Carter, 110630 A. Crawford, 206745 R. C Cook, 3/10478 B. Coy, M2/36021 D. J. Codey, 113067 R. L. Cogan, 60453 B. Caswell, 303173 R. B. Dufton, 19678 D. E. Durwood, 424059 G. B. Dickson, M/202175 R. W. F. Dean, Feb. 26th; 102020 S. B. R. Bearder, 12/345 V. Cuthill, 17748 L. P. D. Cross, 17021 N. P. Court, 33141 J. A. Duff, 177685 H. T. Davis, Feb. 27th; 140385 D. H. Brand, 62457 C. H. Bullen, 101887 A. W Blenkin, March 1st; 553740 H. Beer, March 3rd; 51644 W. G. Cross, March 8th; 124966 W Ainsworth, 51753 C. Anscombe, 47708 F. E. Bryant, 34753 W. R. Cooper, March 13th; 316921 J. Bradt, March 20th; 767148 W. J Burns, March 27th; 156109 J. R. Chandler, April 1st; 3019 E. Croley, April 6th; 317949 E. Barker, 200195 A. P. Cloherty, 805057 A. S. Deaville, 17478 H. M. Dawson, April 30th.

The following are transferred to the unempld. list:—Flying Officer G. A. Tilly (from S.O.), Sept. 2nd; Pilot Officer G. L. Smith (from S.O.), Sept. 13th.

Sec. Lt. A. F. Cook relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 13th.

AIR MINISTRY, Oct. 7th.

R.A.F.—FLYING BRANCH.—Sec. Lts to be Lts.:—(Hon. Lt.) W. V. Tyrrell, Aug. 30th, 1918; O. P Gosling, April 13th.

The following relinquish their commns. on ceasing to be empld.:—Lt. W. J. Hooke, Feb. 13th (substituted for notification in "Gazette" of April 1st); Lt. C. C. Miller (Lt., W. Rid. R.), May 28th; Lt.-Cl. R A. Bradley, C.M.G. (Maj., N Staffs R.), Aug. 27th; Lt. D. B. Aitken, D.F.C. (Lt., Sea. Highrs.), Sept. 8th; Lt. L. C. Tims (Lt., R. War. R.), Sept. 9th; Capt. C C. Haynes (Capt., Devon R.), Sept. 15th; Capt. G. A. Turton (Lt., Yorks R.), Sept. 23rd.

The following are transferred to the unempld. list:—Lt. J. D. Canning, Jan. 6th; Sec. Lt. W. Ehmke, Sec Lt. A. G. G. Greene, Sec. Lt. F. M. Gulland, Sec. Lt. F. H. Howard, Sec. Lt. L. V. Lane, Sec. Lt. L. Lennan, Sec. Lt. A. G. Lewis, Sec. Lt. M. B. Macaulay, Sec. Lt. W. H. McKeigan, Sec. Lt. F. C. Manderson, Sec. Lt. K. W. Mayhew, Sec. Lt. J. Milton, Sec. Lt. C. Moyer, Sec. Lt. J. W. Persons, Sec. Lt. W. C. Rigg, Sec Lt H. V. Woolidge, Feb. 1st; Lt. J. R. Wilford, March 6th; Lt. W. R Glenney, March 7th; Sec. Lt. C. R. McInnes, March 15th; Sec Lt S. S. Rackowe, March 17th; Sec. Lt. H. D. H. Williams, March 29th; Lt. R. H. Williams, March 31st; Lt. A. B. Whaley, April 13th; Lt. A. A. Webster, April 5th; Sec. Lt. M. C. Abrams, April 19th; Sec. Lt. H. C. Weese, May 9th; Lt. F. Young, May 15th; Lt. C Ross, May 17th; Sec Lt. N. Jones, Sec. Lt. T. A. Johnston, May 20th; Sec. Lt. J. F. R Johnstone, June 13th; Sec. Lt. E. C. Jones, June 14th; Lt. D. Maclean, June 15th; Sec. Lt. A. J. Jones, Sec. Lt. H. Jamieson, Sec. Lt. P. M. Keary, July 12th; Lt. W. E. C. Coombs, July 25th (substituted for notification in "Gazette" of Sept. 16th); Sec. Lt. C. M. Sherlock, July 30th; Flying Officer P. J. Knox, Aug. 2nd; Flt. Lt. J C. Brooke, D.S.C., Aug. 7th; Flying Officer S. A. Gilray (substituted for notification in "Gazette" of March 7th); Pilot Officer (Hon. Flying Officer) H. Thickett, Aug. 14th; Pilot Officer J. Terry, Aug. 19th; Flying Officer C. R. Titus, Aug. 22nd; Flying Officer B. E. Berrington, Aug. 26th; Flying Officer R. Kilpatrick, Pilot Officer R. W. Roberts, Pilot Officer J. Tate, Aug. 29th; Flying Officer P. H. Sadler, Aug. 30th; Flying Officer H. J. Bristoll, Aug. 31st; Flying Officer F. J. Bull, Sept. 1st; Flying Officer T. W. Banks, Flying Officer E C. Booker, Flying Officer J. W. Simpson, Sept. 2nd; Flying Officer A. S. Anderson, Flying Officer H. V Buckenham, Sept. 3rd; Flt. Lt. D R. Baylis, Flying Officer W N. Bussell, Flying Officer J F. Ellor. Flt. Lt. H. L. Satchell, Sept. 4th; Flt. Lt. A. F. Buck, Sept. 5th; Flying Officer H. A. Allback, Flying Officer J. G. Argles, Flying Officer E. F. Bensly, Flying Officer G. A. Binning, Flying Officer T Brandon, M.C., Pilot Officer G. W. Smart, Flying

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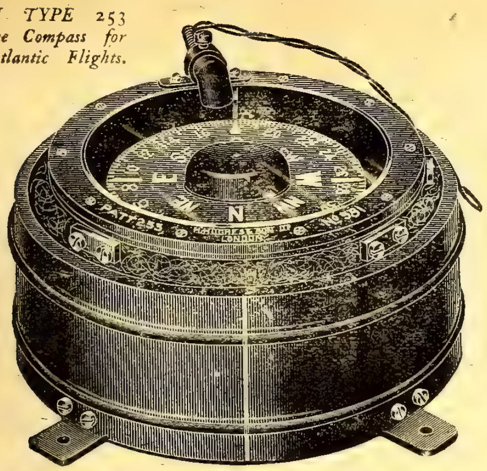

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Officer H. F. Nicholls, D.F.C., Sept. 6th; Flying Officer J. G. Murray, Pilot Officer E. A. C. Watts, Sept. 8th; Flt. Lt. R. G. Gardner, D.S.C., Pilot Officer W. G. Hines, Flying Officer F. H. Hiscock, Flying Officer J. Marsden, Pilot Officer P. C. Thurnau, Flying Officer C. S. White, Sept. 9th; Flt. Lt. R. Blatherwick, Pilot Officer A. V. Bollins, Pilot Officer (Hon. Flying Officer) W. Hamley, Pilot Officer P. D. Mitton, Pilot Officer A. H. Winham, Flying Officer W. S. Wright, Pilot Officer O H. Young, Sept. 10th; Flying Officer G. N. Anderson, Pilot Officer A. D. M. Edwards, Flt. Lt. M. Nares, Flying Officer E. J. Smart, Pilot Officer V. S. Winchester, Pilot Officer T. B. Young, Sept. 11th; Pilot Officer E. G. Banham, Pilot Officer F. W. Byrne, Flying Officer J C. Seccombe, Pilot Officer E. H. Whitmore, Sept. 12th; Flying Officer C. O. Bean, Flying Officer J. J. Boyd-Harvey, Flying Officer F. W. Evans, Pilot Officer E. C. Rutter, Flying Officer A D. Shannon, Flt. Lt. G. H. B. Streatfield, M.C., Pilot Officer R. J. Weaver, Sept. 13th; Pilot Officer P. A. Cox, Flying Officer G. J. Glazier, Flying Officer H. R. Goss, Pilot Officer (Hon. Flying Officer) C. C. Loretto, Pilot Officer E. O. Rutherford, Pilot Officer R. K. Stinson, Sept. 15th; Flying Officer H. J. Andrews, Flying Officer J. O. Durham, Sept. 16th; Flt. Lt. A. C. Ferguson, Pilot Officer G. A. Thompson, M.B.E., Flying Officer H. H. Wood, Pilot Officer W. T. Wrathall, Sept. 17th; Pilot Officer S. K. Fey, Flying Officer L. A. D. Mead, Pilot Officer W. Narburgh, Pilot Officer J. E. Richards, Pilot Officer J. W. Tallin, Sept. 18th; Pilot Officer F. M. Purcell, Sept. 19th; Pilot Officer D. G. Bailey, Pilot Officer J. W. Birkenshaw, Flying Officer R. C. Pigott, Sept. 20th; Pilot Officer E. B. Fielden, Sept. 21st; Pilot Officer G. C Charlton, Sept. 22nd; Flt. Lt. E E. Barnard, Flying Officer W. D. McKeown, Flying Officer A R Spurling, D.F.C., Sept. 23rd; Flying Officer B. M. F. Albanese, Flying Officer A. Alcorn, Pilot Officer C. M. Arias, Pilot Officer E. Lofquist, Pilot Officer A. E. W. Middleton, Flying Officer L. M. Mathewson, Flying Officer J. A. Watson, Flying Officer L. Yerex, Sept. 26th; Flt. Lt. T. A. Gladstone, Sept. 27th; Flying Officer H F. Crowe, Pilot Officer C. I. Foote, Pilot Officer A. J Lacasse, Flying Officer A. A. Leitch, M.C., D.F.C., Pilot Officer R. N. Patterson, Pilot Officer W. E. Purdy, Flying Officer G. S. M. Warlow, Pilot Officer S. K. Young, Sept. 28th; Flt. Lt. G. A. Giles, Pilot Officer I. G. Morrison, Oct. 6th.

Capt. C P. O. Bartlett relinquishes his commn. on account of ill-health, and is granted rank of Maj., Sept. 3rd (substituted for notification in "Gazette" of Sept. 16th).

Lt. H. A. Reid relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 4th.

Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. R. Johnson, May 20th (substituted for notification in "Gazette" of June 27th); C W. Savignac, July 12th (substituted for notification in "Gazette" of April 15th); J. S. McGeown (contracted on active service), Sept. 28th; W. Woods (contracted on active service), Sept. 29th.

The initials of Sec. Lt. J. R. D. Goadsby are as now described, and not "G. R. D." as stated in "Gazette" of Aug. 13th, 1918.

The notification in "Gazette" of April 1st concerning Lt. W. J. Hooke is cancelled.

The notification in "Gazette" of May 23rd concerning Sec. Lt. W. T Ward is cancelled.

The notification in "Gazette" of May 30th concerning Sec. Lt. H. B. Mills is cancelled.

The notification in "Gazette" of July 11th concerning Sec. Lt C. R. Abell is cancelled.

The notification in "Gazette" of Sept. 5th concerning Sec. Lt. (Hon. Lt.) R. Bowman is cancelled.

Administrative Branch.—Sec. Lts. to be Lts.:—(Hon. Capt.) A. J. Dawes, April 2nd, 1918; G. J. Maunsell, April 25th, 1918.

R. White is granted a temp. commn. as Pilot Officer, Sept. 10th.

The following relinquish their commns. on ceasing to be empld.:—Maj. I. A. S. Cooke, O.B.E. (Capt, Conn. Rang.), Sept. 30th; Lt. C. E. Crowne (Lt., E. Yorks R.), Oct. 4th.

The following are transferred to unempld. list:—Sec. Lt. V. Lockey, March 17th (substituted for notification in "Gazette" of April 1st); Lt. A. R. Shepperd, April 14th; Pilot Officer P. T. Shepherd, Flying Officer W. A. Knight, Aug 21st; Pilot Officer (Hon. Sqdn. Leader) S. A. Snatt, Aug. 31st; Flying Officer E. O. L. Bell, Flying Officer R. Bradford, M.C., Sept. 4th; Flying Officer W. H. Botterill, Sept. 6th; Flying Officer P. L. Harris, Sept 8th; Flying Officer (Hon. Flt. Lt.) T E. Gentles, Flying Officer J. Metcalfe, Sept. 10th; Flt. Lt. J. H. N H. Burke, Pilot Officer H. T. Ecob, Sept. 11th; Pilot Officer I. McIvor, Flying Officer C. H. Witty, M.B.E., Sept. 12th; Flt. Lt. H. E. Craymer, Pilot Officer L. F. Joyner, Sept. 15th; Flying Officer P. Cairns, Sept. 16th; Flt. Lt. R. L. Allport, Flying Officer T. Gill, Sept. 20th; Flt. Lt. A E. Irvin, Sept. 27th; Pilot Officer P. H. Leigh, Flying Officer H. L. Northey, Pilot Officer J. Skinner, Pilot Officer E P. Woodman, Sept. 28th.

Lt. (actg. Maj.) D. G Northam relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain rank of Maj., Sept. 27th.

Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—F. C. Hilbert, June 13th (substituted for notification in "Gazette" of July 15th); N. B. Edwards, Aug. 7th (substituted for notification in "Gazette" of Dec. 13th, 1918); H. C. Thomas, Sept. 26th (substituted for notification in "Gazette" of Aug. 1st).

The notification in the "Gazette" of Sept. 5th concerning Lt. B. Burton is cancelled.

Technical Branch.—Lt. A. G. Ridgon is graded for purposes of pay and allowances as Capt whilst empld. as Capt., Grade (A.), May 1st.

Sec. Lt. R. M. Weaver to be Lt. without pay and allowances of that rank, June 6th.

Sec. Lt. O. B. Paton to be Sec. Lt., Grade (B.), from (Ad.), Oct. 29th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. F. R. Davis (Lt., R.E.), Oct. 13th, 1918; Sec. Lt. (Hon. Lt.) G. P. Harding (Lt., Ches. R.), Sept 19th; Capt. M. D. McFarlane (Capt., Mddx. R.), Sept. 25th

The following are transferred to unempld. list:—Capt. J. F. G. Fitzgerald, May 14th (substituted for notification in the "Gazette," June 3rd); Flying Officer F. Briggs, Aug. 27th; Pilot Officer (Hon Flying Officer) H. F. Jupp, Aug. 29th; Flying Officer H. Bristow, Pilot Officer B. Freeman, Aug 30th; Sqdn. Leader E. J. Howard, O.B.E., Sept. 3rd; Flying Officer R J. Saunders, Sept. 4th; Pilot Officer J. Winslow, Sept. 5th; Flying Officer J. L. Hill, Flt. Lt. W. C. Lambert, O.B.E., Sept 6th; Flt Lt. E E. Adams, Pilot Officer T. R. Barlow, Sept. 8th; Pilot Officer W. Amor, Pilot Officer H. S. Barton, Flt. Lt. A. Merrick, Flying Officer N. Penty, Flt. Lt. J. H. Smith, Sept. 9th; Flying Officer G. M. Erroll, Pilot Officer (Hon. Flying Officer) F. W. Wright, Sept 10th; Flying Officer G. R. Simms, Pilot Officer H. Weakley, Pilot Officer H. R. White, Sept. 11th; Flying Officer F. G. J. Didden, Sept. 12th; Flying Officer H. J. Gallagher, Sept. 13th; Flt. Lt. W. C. Broadhead, Pilot Officer W. J. Burley, Flt. Lt. (Hon. Sqdn. Leader) L. N. G. Filon, Sept. 15th; Pilot Officer J. Bremner, Sept. 17th; Flt. Lt. (actg. Sqdn. Leader) W. W. Hall, O.B.E., Sqdn. Leader G. E. Woods-Humphrey, Pilot Officer H. G. Williams, Sept. 18th; Pilot Officer W. J. Harries, Sept. 19th; Pilot Officer (Hon. Flying Officer) S. G. Robinson, Flt. Lt. H. E. Smith, Pilot Officer R. M. Weaver, Sept. 20th; Flying Officer E. R. Blount, Sept. 22nd; Pilot Officer F. H. Lake, Sept. 27th; Flying Officer W. S. Jamieson, Sept. 29th.

Capt. (actg Lt.-Col.) L. B. Cook, O.B.E., relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain the rank of Lt.-Col., Sept. 29th.

Capt. J. Stewart, O.B.E., relinquishes his commn. on account of ill-health caused by wounds, and is granted the rank of Maj., Sept. 27th.

Sec. Lt. G. R. Rankine relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Sept. 27th.

The surname of Pilot Officer (Hon Flying Officer) J. C. Graddon is as now described, and not "Graydon" as stated in the "Gazette" of Sept. 12th.

The notification in the "Gazette" of Sept. 12th concerning Sec. Lt. A G. Rigdon is cancelled.

Medical Branch.—Flying Officer A. E. Collie to be Flt. Lt., Sept. 28th.

Flt. Lt. F. H. Wallace is transferred to unempld. list, Sept. 6th.

Memoranda.—The following Cadets are granted Hon. Commns. as Sec. Lts.:—182964 G. W. B. Bruford, Jan. 7th; 181442 H. P. Soundy, Jan. 9th; 179190 F. W. Dixon, Jan. 14th; 179540 D. L. Evans, Jan. 17th; 180850 F. C. Rankin, Jan. 18th, 178517 L. L. Barnard, 316644 H. R. Withers, Jan. 20th, 44987 J. W. Griffiths, Jan. 25th; 300084 H. G. Paterson, Feb. 5th; 175771 C. E. Lippiatt, Feb. 7th; 58511 F. A. Gellan, Feb. 10th; 29380 E. I. Treasure, Feb. 15th; 200578 F. C. Stone, Feb. 21st; 23041 C. M. Penly, Feb. 23rd; 767587 F. D. H. Green, 31132 R. Gladwin, 24629 F. Holmes, 350996 E. Hardman, 55147 H. H. Hall, Feb. 24th; WR/310752 A. L Fossey, 12767 M. M. Finch, S/3194 G. E. Gatling, 20729 W. E. Grace, 11410 C. F. Gurdlestone, M/20831 L. J. Garland, 35671 J. Green, 41056 C. F. Gregory, 8040736 J. T. Hopper, 374313 E. Hollands, 128389 F. L. Hanner, 31310 K. L. G. Hart, 2089 O C. Hooper, 54193 W. R. Holland, 76008 C. F. Howard, 81208 S. T. Hurst, 196065 N. S. A. Humphries, 2960 J. Haines, 196065 J. C. Jones, M/17729 A. Kerrigan, 2913 F. Lee, 105958 F. A. Longman, Feb. 25th; 110630 W. G. Elliott, 18629 C. E. Fitzgerald, 35185 W. H. Fisher, 152334 N. B Fuidge, 19810 A. Fieldsend, 240212 J. H. Griffiths, 55964 A. R Gardiner, 53534 H. Gibbs, 105622 C F Grainger, 265855 C. F. Greaves, 51258 R. F. Granet, 202997 S. T. Hunt, 322113 J. Hastings, M/31545 A. T. Hurle, 9799 W. F. Howard, 90259 H. Jeffries, M/130223 W. E. James, 134883 G. S. Jones, 91823 H W. Knight, 12593 T. W. Kennedy, 19379 C. K. Fenn Smith, 176039 S. H. White, Feb. 26th; 17722 W. Gregory, 44506 J. Griffiths, Feb 27th; 93512 J. M. Hayes, March 3rd; 183103 H. J. Powell, March 5th; 29125 J. M. Failkner, March 7th; 317555 T. G. Daniels, March 9th; 25949 G. L. Grace, March 13th; 408390 T. Banks, April 4th; 30311 J. Harlow, April 6th; 178079 J. B. Hanner, 21612 J C. Haydon, 318430 G. G. McLardie, April 11th; 175652 G M. King, April 17th. M2/033416 C. Disney, F/41832 F. W. Dines, 70505 M. P. Gurney, 169107 S. Hird, 6628 S. G. Hallett, 203757 W. C. King, April 30th; 128344 J. E. Bessell, May 2nd; 175499 A. A. Bovey, May 4th; 12633 G. E. W. Tye, May 23rd; 251867 J. Kennedy, June 24th; 137624 E Andrews, July 7th

The following Overseas Cadet is granted an Hon. Commn. as Sec. Lt.:—183653 L. P. Lyne, Feb. 13th.

Lt.-Col. (actg. Brig.-Gen.) J. A. Houison-Craufurd, C.M.G., C.B.E. (Lt.-Col., retired pay), relinquishes his commn on ceasing to be empld., and is granted hon. rank of Brig.-Gen, June 1st.

The notifications in "Gazettes," July 25th and Sept. 12th, concerning Lt.-Col. (actg. Brig.-Gen.) J. A. Houison-Craufurd, C.M.G., C.B., are cancelled.

Capt. R. R. L. Thom (Capt., Bedford R.) relinquishes his commn. on ceasing to be empld., Oct. 2nd.

Temp. Hon Lt. (Hon. Capt.) H. T. Wright relinquishes his commn. on ceasing to be empld., Sept. 16th.

The following are transferred to unempld. list:—Lt. (actg. Capt.) C W. Hogg, from (S.O.), April 23rd (substituted for notification in "Gazette" of July 1st); Flying Officer J. A. D. Wallis, from (S.O.), Sept. 4th; Pilot Officer H. K. Fairbrother, M.B.C., from (S.O.), Sept. 10th; Flt. Lt. H F. Anns, from (S.O.), Pilot Officer E. A. Stratton, Sept. 17th; Flying Officer L V. Boxer, from (S.O.), Sept. 20th; Flying Officer J. H. Evans, from (S.O.), Oct. 5th.

The notification in "Gazette," June 10th, concerning 182267 Cadet A. H. Marsh is cancelled.

The notification in "Gazette," Oct. 3rd, concerning the following Overseas Cadets are cancelled:—200061 H. Aish, 540406 E. H. Cotterell, 242 O. R. Evans, 65346 P. Fuller, 110215 G. W. Hadrill, 174054 W. R. Hendry, 177247 M. J. Kelly, 475509 F. J. McLean, 302965 A. Scott. 349163 S. A. Terroux, 228090 L. E. Thompson, 6616 K. Tyrle, 681211 A. Warnes, 109182 G. O. Williams, 2134943 W. A. Woodman.

Air Ministry, Oct. 10th.

The King has been pleased to give orders for the following appointments to the Most Honourable Order of the Bath in recognition of distinguished services rendered during the War:—

C.B. (Military Division).

Group Capt. P. R. C Groves, C.M.G., D.S O., R.A.F.

Wing Comdr. A. J. L. Scott, M.C., A.F.C., R.A.F.

The King has been pleased to give directions for the following appointments to the Most Distinguished Order of Saint Michael and Saint George in recognition of distinguished services rendered during the War:—

C.M.G.

Group Capt. R. H. Clark-Hall, D.S.O., R.A.F.; Maj. (actg. Lt.-Col.) R. D. Waterhouse, R.A.F.

The King has been pleased to give orders for the following promotions in and appointments to the Most Excellent Order of the British Empire in recognition of distinguished services rendered during the war:—

C.B.E. (Military Division).

R.A.F.—Wing. Comdr. (A/Air Commodore) F. G. Willock, D.S O.; Chaplain-in-Chief Rev. H. D. L. Viener, M.A.; Wing Comdr. (A./Group Capt.) A. D. Cunningham, O.B.E.; Hon. Col. L. Munro, O.B.E. (Col., Retd. List, Hants R.); Wing Comdr. W D. Beatty, O.B.E., A.F.C.

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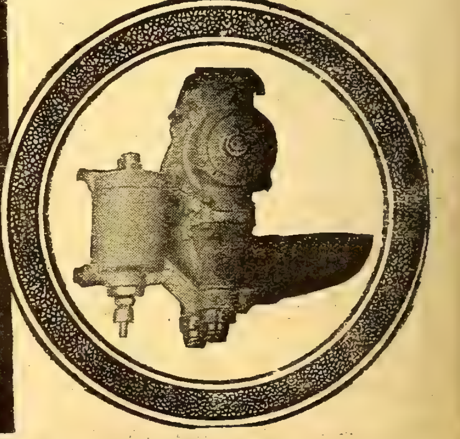

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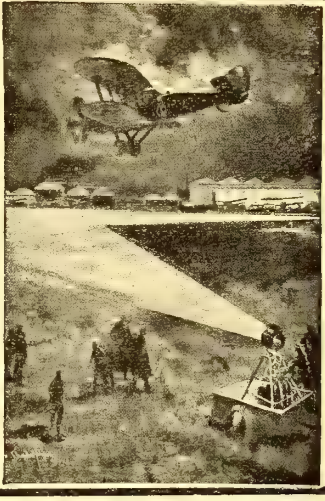

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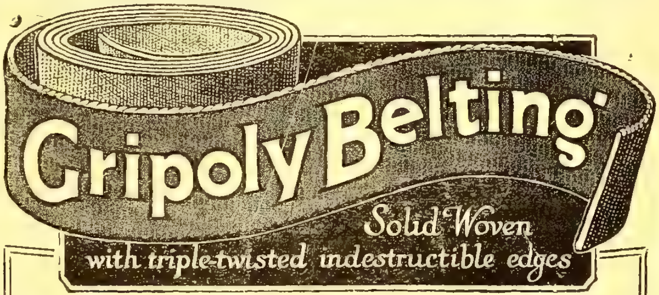

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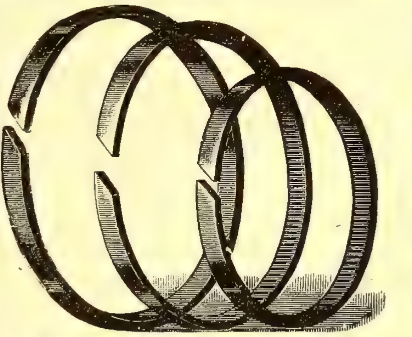

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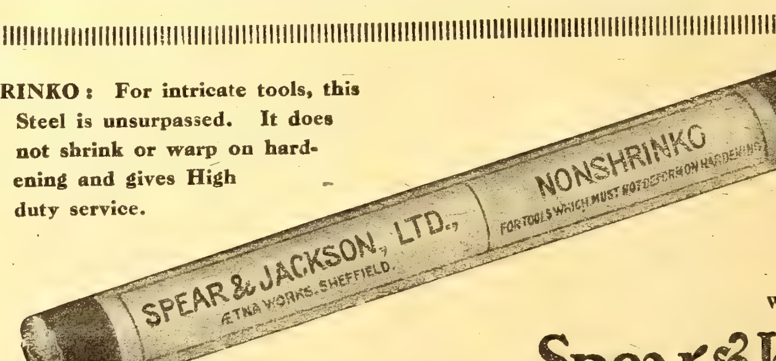

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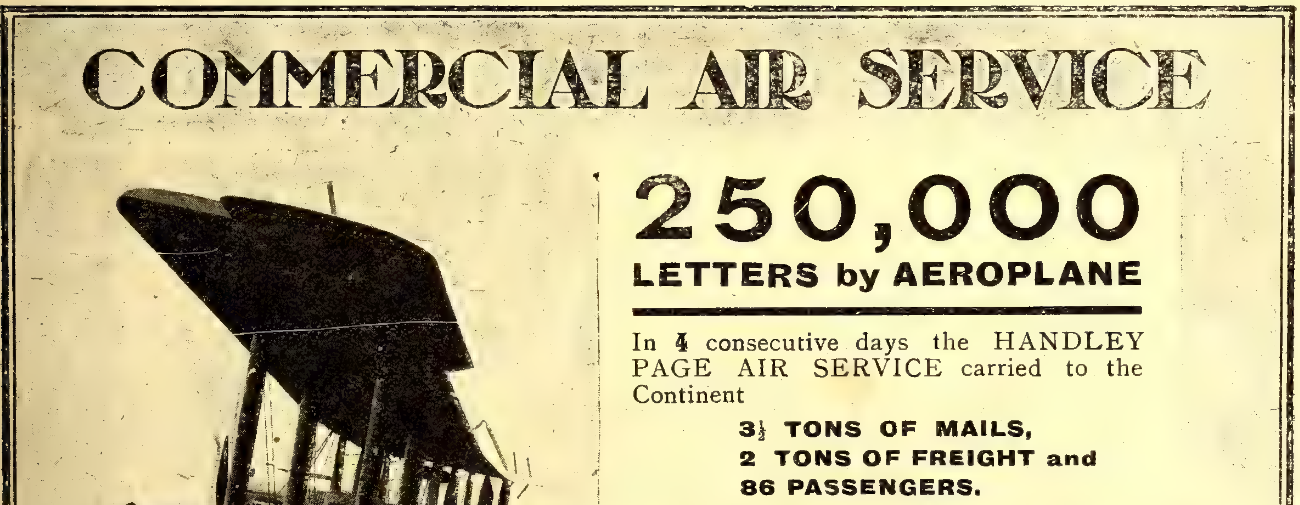

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ON BLAZING THE TRAIL.

Though at the moment, considering all the difficulties under which the Aircraft Industry is labouring, the progress of Civil Aerial Transport may be regarded as moderately satisfactory, it cannot be said that this country is doing all that it might do to obtain a command of the air in the realm of Commercial Aeronautics analogous to that which is held on the sea by our Mercantile Marine. The following notes are therefore published in the hope that they may provide food for thought by the Aircraft Industry, by such members of the British Public as have the intelligence to take an interest in aeronautical affairs, and by the Department of Civil Aviation—about whose generous contributions to the traditional Great Pavement of Hell we have heard so much.

Some time ago certain R.A.F. flying-boats made a tour of the Baltic Sea, presumably with the intention of impressing on the numerous indeterminate, though nominally self-determining, Slav tribes which were lately the subjects of His Imperial Majesty the Tsar the might of British Air Power. At any rate that would appear to have been their proper function. In the course of their journey these boats visited certain friendly nations which were benevolently neutral in the recent brief war which has somewhat discommoded part of Europe and has afforded the United States an excuse for becoming a military Power of importance.

One of the countries visited was the Kingdom of Sweden, and in consequence the Information Department of the Air Ministry, so ably conducted by Major-General Swinton, issued a graphic account of the way in which one of these boats had impressed on the inhabitants of Stockholm the superlative excellencies of British hydroaeroplanes. Naturally those concerned with the Aircraft Industry were elated at the good work thus done by a Government Department in aid of British trade, and began to think that after all the Department of Civil Aviation was justified in its claim that it was "blazing the trail" for the Industry.

One does not for a moment doubt the accuracy of the "news story"—to use a Fleet Street *cliché*—as issued by the Air Ministry from information received, but it would seem that some of the inhabitants of Stockholm failed to avail themselves of the opportunity so kindly provide by the R.A.F. of seeing Britain's best and latest method of transport. The following letter will explain itself, and perhaps the Information Department of the Air Ministry will vouchsafe an explanation of the discrepancies between its communiqué of September 2nd and the affairs hereafter related:—

THE SWEDISH ASPECT.

Sir,—With reference to the issue of THE AEROPLANE dated Sept. 10th—On page 971 particulars of the visit of the F.5 boat here are given. The boat arrived here in the evening of the 3rd ulto., and, avoiding flying over any part of the city, landed in the large lake outside Stockholm. I was unable to ascertain whereabouts in the harbour it was to be moored, and although we flew round on an Avro we were unable to find it.

The following day the boat left for Gothenburg without having made any demonstration flight or doing passenger-carrying at all. Certainly nobody in Stockholm saw the boat either in the air or on the water, except representatives of the British Legation who went down in a motor-boat to see it, and it is difficult to see how any impression, good or bad, was created in this capital.

With several German flying boats and seaplanes continually flying about the city, and owned by Swedish individuals or newly-formed air-traffic companies, it is easily seen that any business created by the need of Swedish merchants is going to Germany. Once German machines are utilised in any numbers it will become practically impossible for any British aviation concern to sell any machines. It is a thousand pities the F.5 boat did no propaganda work here, as the Press is quick to attribute anything of this kind to unsuitability of the machine.

A POINT FOR THE S.B.A.C.

I do not think English aeroplane manufacturers quite appreciate the development of aviation in Sweden. There is an air traffic company now organising which has a capital of over three million kroner, and is sending its representatives to different countries to inquire about machines and to place orders. Swedish people have seen nothing but German type machines up to now, and having regard to the accessibility of Germany compared with England, the English firms are handicapped at the start.

A wealthy Swede has just presented the Flying Corps here with two modern German land machines, one scout and a two-seater, and these were expected here to-day at our aerodrome, where they will be thoroughly demonstrated to the city before being handed over. But do you think a British firm would dream of sending a machine over? Not a hope!

The Air Traffic Company by whom I am at present employed are shortly placing orders for land machines and seaplanes, and naturally I am pushing the advantages of British machines all I know. But unless the British companies can go ahead with some advertising and offer reasonable prices and quick deliveries I fear my efforts will be unavailing.

A week or so ago I received replies to my inquiries for a small single-seater to demonstrate and exhibit, as our Avros and D.H.6s are otherwise employed, and the best offer I got was an 80 Le Rhone Scout for £500, second-hand. The cost of transit would be half as much again!

Last night I attended a lecture by invitation of the Aeronautiska Sällskapet given by two German doctors on the medical aspects of aviation. The lecture was illustrated by lantern slides and much apparatus was used to demonstrate various tests, the members of the audience being invited to undergo each.

Swedish manufacturers are alive to the possibilities of aerial advertisement of their goods. Last week I was paid 1,500 krs. (about £88) to take a bag of coffee and some leaflets from Gelfe to Falun, a distance of about 40 miles, where I happened to be going to give an exhibition.

An aeroplane purchased by the Government from Germany on its arrival at the south of Sweden was inspected on landing by representatives of the Flying Corps and on account of its age and condition was not accepted.

At the Thulin flying school passenger flights may be had for 30 or 40 krs., and the newspapers ask why we charge 100 or 150 for flights with our Avros. Our reply is that we are a paying concern, whereas Messrs. Thulin can hardly be said to be unduly rushed with aircraft business, moreover, our pilots and machines are still "serviceable"

WHAT DID HAPPEN?

It will be remembered that, according to the aforesaid communiqué the boat flew over Stockholm and took up sundry passengers. The writer of the letter is a British pilot now working with the "P. O. Flygkompani" in

Sweden, so one naturally assumes that he would be more interested in the arrival of a British machine than would the non-flying inhabitants of Stockholm, and so would be more likely to see it in the air and to find its mooring place when at rest.

Just why representatives of the British Legation should themselves trouble to go and see it is not very clear, except that presumably they were gratifying a little mild personal curiosity. But the action proper to the British Legation under the circumstances is very clear indeed. The Commercial Attaché at the Legation, if such a mere person is tolerated in that august establishment, should have given a banquet, or at least a lunch, in honour of the crew of the F-boat, and should have bidden to the feast the leading business men of Stockholm, after which the guests should have been taken in motor-boats to see the flying-boat, and should have been offered passenger flights therein.

If our Legation at Stockholm is actually interested in serving British interests in Sweden, the Minister himself should have presided at such an entertainment, and the Naval and Military Attachés should have invited the Swedish Naval and Military chiefs, or at any rate the chiefs of the Swedish Flying Service, to view and test the British craft. So far as one can gather, nothing of the sort was done, and so a very fine opportunity seems to have been lost of impressing the Air Power of the British Empire and the excellence of British aircraft on a people whose country is by nature peculiarly suited to the uses of seaplanes, and especially of flying-boats of the larger kinds.

Germany's Enterprise.

It will be seen that the writer of the letter refers to the continual flying of German hydro-aeroplanes about the city of Stockholm. Also it will be remembered that for months past—in fact since a time before the war was finished—this paper, thanks largely to the excellent information sent by its Scandinavian correspondent, Mr. Erik Hildesheim, himself a pilot trained at the Thulin school in Sweden, has constantly drawn attention to the efforts made by the German Aircraft Industry to capture Swedish business. So the Department of Civil Aviation and the British Aircraft Industry cannot complain that they have not had fair warning of what to expect.

Yet, as this letter shows, nothing active has been done to impress on Scandinavia in general and on Sweden in particular the multifold virtues of British aircraft. As has been said, Sweden offers a magnificent market for hydro-aeroplanes of all sorts, and the value of this market has been materially increased during the past week or so by the formal cession of the Aaland Islands to Sweden.

A Strategic Stronghold.

These islands form a continuous chain across the Gulf of Bothnia between Sweden and Finland, and there is between the islands ideal water for seaplanes. The people are typical Scandinavians, hard-working and intelligent in spite of a hundred years of Slav misrule.

They are worth cultivating not only from a business point of view, but for military reasons, for in the Great War against the Slavs they will be the North-Eastern outpost of Teutonic civilisation against the yellow men. And, because—unless all one's hopes and labours come to nought—British Air Power in the Great War will play even a greater part than British Sea Power played in this recent affair, it will be well that the people of this outpost of our civilisation shall be made familiar with British aircraft and with British aviators.

That perhaps is looking too far ahead, and such considerations can hardly be expected to weigh with our politicians or with our business men. But the commercial possibilities of Sweden and the Aaland Archipelago should certainly appeal to our cupidity, if to no higher quality.

Self-Help and Self-Preservation.

It is becoming more and more evident that the Department of Civil Aviation is without value to the Aircraft Industry, and is in fact—as will be seen later in these notes—doing positive harm, in its stupid attempts to advertise itself, by failing to perform journeys which to a mere commercial air-line would be all in the day's work. Which is quite apart from the harm it is doing by holding up progress at home by the actions or inactions of its incompetent inspectors and licensing officials.

Therefore it is evident that the Aircraft Industry must proceed to help itself. And if it is to help itself it must do so far more effectually than any British Industry has done in the past. One recognises that rival manufacturers would cheerfully cut one another's throats in the sacred cause of commerce, but this is a case of all hanging together lest they should hang separately.

Wanted: Genuine Propaganda.

With our usual lack of political foresight we—instigating our Allies—have prohibited Germany from making aeroplanes of war. Which means that the German Aircraft Industry is forced at once to turn all its designing genius onto the production of commercial aeroplanes, instead of sitting up on end begging for Government orders and doing nothing while the orders are not coming. Consequently, the German being about the best business man in the world, and his workpeople being already at work like niggers to capture the world's trade—despite the astounding nonsense poured forth by Sir Auckland Geddes a week or two ago—Germany is, as this letter from Stockholm shows, already in a fair way to capture the Swedish trade in aircraft.

The only sane course for the British Aircraft Industry to take is for the S.B.A.C. to form a Propagandist Department of its own, and to form a regular squadron of demonstration aircraft, to which each live aircraft firm will contribute a unit. This S.B.A.C. squadron will then tour the world and demonstrate beyond argument to all foreign countries that British aircraft, whether for war or commerce, are incomparably the best. If the S.B.A.C. has the pluck and the common sense to combine in such a scheme it can, inside twelve months, sweep all competitors from its path.

Serving Two Masters.

There is the highest possible authority for the maxim that no man can serve two masters. Therefore it should be obvious that the units of the Royal Air Force cannot serve at one and the same time the Military (including the Naval) branch of the Air Ministry and the Civil Aviation Department. So far as the attempt has been made it has been an abject failure.

It would be well if the Air Council would realise that an R.A.F. unit must be either a purely military force, and must be used and stationed as such, or that it must be a purely civilian affair, in which Service ranks and customs are abolished and the whole thing runs entirely as a civil service—like the Post Office. It would be better still if the Air Council would make up its mind to cut loose its connection with civil aviation and let the Aircraft Industry work out its own salvation. For at present it is doing far more harm than good, and one can see no reason why its methods or its effects should ever change for the better.

Official Parasites.

It is not that one has any objection to a number of officials—deserving or otherwise—holding jobs under the Civil Aviation Department. Officials of some kind must exist to inspect and license aircraft. It is their clumsy methods which are so objectionable.

There is a story of an Irish servant who, complaining of a plague of fleas left in her room by an unclean predecessor, remarked :—" It isn't the little bit they'd eat that I'd begrudge them, but their constant tramplin' has me annoyed."

Similarly it is not their little salaries that one would begrudge the officials who profess to control Civil Aviation; it is their constant trampling about in wrong directions and with wrong methods which disturbs the progress of Commercial Aeronautics. One has already given an example, or alternatively has asked for an explanation, of official methods in Northern Europe. Let us now consider another case in the South.

BLAZING THE TRAIL.

Here then is a letter from one of the most skilful pilots and most experienced aerial navigators in this country concerning the much-boomed route from England to Egypt—which latter country has been prematurely labelled "the Clapham Junction of the World's Air Traffic."

Just why any civilian should want to go to Egypt when on the way to either India or the Cape passes comprehension, seeing that by far the best way to India is *via* Germany, Hungary, and Turkey, and the best way to the Cape is down the West Coast of Africa by seaplane. There is good military reason for making Egypt an important centre of Service aviation, but none for making it important from a civil aviation point of view, except as a holiday resort. Which merely illustrates the folly of mixing up the two sides of aeronautics.

Be that as it may, the Air Ministry decided to "blaze the trail" to India and the Cape *via* Egypt. And this is how it is done, according to the letter before mentioned :—

THE ROUTE TO CAIRO.

The Air Force expenditure has been a subject of considerable comment during 1919, and at a time when unnecessary expenditure of all sorts should have been curtailed there has been a particularly flagrant instance of disregard of economy by the Air Ministry. It is one of the most pitiful scandals of its kind, involving enormous expenditure, colossal waste, and severe loss of life, and has been going on unchecked and hitherto unnoticed during the past few months.

The origin of the scheme to move three squadrons of Handley Page machines to Egypt is traceable to the decision to make Egypt a world's air traffic junction. The scheme itself seems sound, but its inception hopelessly premature. The attempt to put it into being under existing conditions is merely consistent with the incompetence which has reigned in high places in the Air Ministry since its birth.

It is necessary in the first place, therefore, to condemn the decision to send machines to Egypt. It illustrates the utter lack of full understanding by highly-placed officials of the conditions of the flight and of their lack of sympathy in the difficulties and dangers of such a route.

The most disgraceful part of the whole matter is that the machines themselves were in a totally unfit condition in many cases to undertake the flight. Many of them had been standing out in the open almost since the Armistice—at any rate, for some months. Their condition was nothing less than hopeless, and cases have occurred in which machines have been ordered off at ridiculously short notice, with all rubber connections and perishable parts rotted by the weather. The figures given below of the percentage of unsuccessful flights prove the total unfitness of the machines themselves.

The nature of the route is entirely unsuitable, after Marseilles, for land machines, and in advocating or authorising flights on land machines over 200, 300, or 400 miles across the water the Air Ministry is guilty of total disregard of the first principles of safety and economy.

That there have not been more than two or three machines lost in the sea is merely luck, and I maintain that it should become a set principle—for the present—that journeys over the water on land machines should be limited to fifty-mile crossings at the longest.

It was on my recent tour to Nice that I was first made aware of the state of affairs. Various Handley Pages stranded *en route* gave me a clue. Skeleton fuselages from crashes on aerodromes further enlightened me.

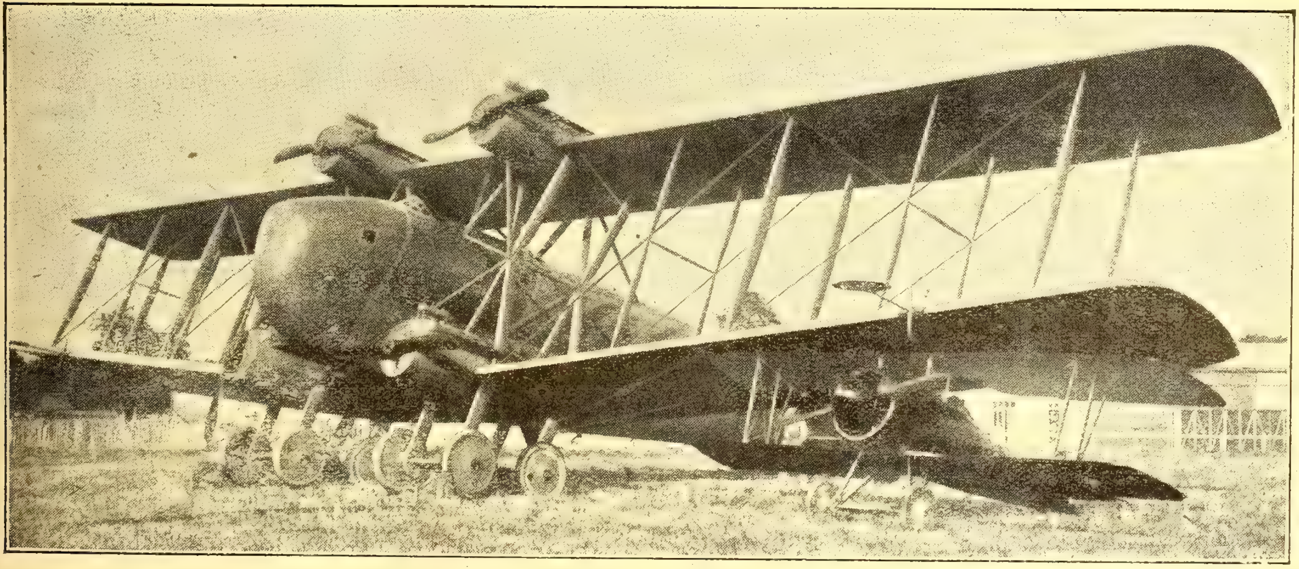
I must here pay a tribute to the loyalty of the officers of the Royal Air Force to the route. I could get nothing out of them whatsoever, great or small, old or young, but that they were carrying on—the usual quiet type, some my own pupils, full of the sense of duty—silently determined and refusing to complain. I gleaned a few personal anecdotes, that was all. I found them working under impossible conditions with perseverence and skill, without assistance.

One heard of one officer and three men going out to a stranded machine stuck on its nose in a ditch, without tackle or mechanical means of assistance, and setting about restoring the machine to its normal condition, a feat that seems almost impossible under such disadvantages. For briefness, I enumerate various points below which I consider should be the subject of an inquiry. No comment is necessary in most cases.

POINTS FOR INQUIRY.

(1) Machines.—Worn out by weather and exposure, rubber joints perished, pumps giving constant trouble. Machines in this condition ordered out on the most difficult and impossible of routes. Result—a great percentage of forced landings, and continual engine trouble. I am naturally vague on figures, but I am of opinion that the percentage of failures to reach the journey's end is as high as 30 per cent., and I believe that the Air Ministry will find this figure difficult to refute.

After much trouble and inquiry, generally from French in-



The Blériot " Aerobus " (four 300 h.p. Hispano-Suiza engines), which has recently undergone its trials at Buc. This machine is designed to carry 28 passengers. A standard Spad biplane is seen alongside it.

habitants, I believe I have traced ten totally wrecked Handley Pages between Paris and the farthest corner of Italy. Had I had time to journey to Athens myself I might have discovered more. (This colossal waste of about £100,000 would have fully covered the cost of shipping the whole lot intact to Alexandria.) The condition of the machines robbed the pilots of all confidence and made success seem almost impossible.

(2) Ten lives have, I believe, been lost on the route, not including Capt. Darley's death, just recorded on the same route.

(3) Officers and men have been stranded for weeks in Italy without pay, and I understand that but for private means there would have been nothing to support them, or their men. Meanwhile the men have lived on the charity of their pilots.

(4) A complete absence of Handley Page riggers or Rolls-Royce engine fitters was noticed in more than one instance. By riggers and fitters I mean men fully skilled in re-rigging or engine repairs on those types. Such a state of affairs is quite inexcusable and has, without doubt, led to many of the accidents. Such a route should have been particularly well equipped in every way, and the absence of really skilled men at bases is typical of R.A.F. methods.

(5) One pilot was saved from drowning by an Italian, while his fellow pilot drowned, and was sent straight back for another machine. He was found by me, *en route,* stranded with trouble of sorts. His attitude was wonderful, but one could feel what it cost him—a boy of about 23—to retain his nerve.

(6) Absolutely no special preparation was made in the way of anchorage for machines, with the result that three Handley Pages were blown over, to my knowledge. The terrific force of the "mistral" should have been well known to the Air Ministry, and the few miserable picket pins supplied proved hopelessly inadequate. I spent part of a night holding my own machine down, while R.A.F. officers helped to secure their Handley Pages, meditating on the greater comfort of the Ritz or the Carlton as compared with the "mistral," pouring rain, and a field of mud!

(7) Journeys of over 250 miles across the sea on land machines in doubtful conditions seems wickedly dangerous. The route from Istres onwards is unsuited to land machines, and the sooner the Mediterranean mails are taken by seaplane the better.

(8) I noticed that a good deal of the flying was done by officers not permanently commissioned. The dangers of the route were such that I think that only officers intending to make flying their career should have been compelled to undertake them.

(9) A complete absence of higher authority or even of interest was noticed. I could find no trace of superior control or inspection, certainly not in such close contact as should be desirous in dealing with such difficult conditions.

A PUBLIC DUTY.

In stating these points I feel a certain obligation to the public in that I think that the facts stated by me should be verified. It is naturally impossible by private inspection or private inquiry to obtain full details. If I am wrong in some cases it is because of official information being most naturally withheld. If my facts are in any way approximately true, I consider that the official responsible for the dispatch of the machines in question should be removed from his post.

Alternatively I consider that any decision involving colossal expenditure should be submitted to the Treasury and that the practice of a grant to the Air Force giving discretion in millions is a mistaken policy. *No commercial firm would ever undertake to move machines to Egypt by air under conditions such as have been described.*

If any notice is taken of these statements there may be some useful result.

A GENERAL VIEW.

I should like to record my opinion that the route to India is such that the design of engines and machines has not yet reached a pitch which can render the undertaking paying as a commercial enterprise, and I think that this test should regulate any such enterprise undertaken by the Air Ministry in the future, apart from experimental work, and I should like to see the principle adopted that land machines shall not be used for oversea work.

There is an ideal point of exchange from aeroplane to seaplane at Istres, using the Etang de Berre. This is adjacent to Marseilles and is an inland lake of considerable size. International troubles would thus be largely overcome, as our Mediterranean bases would then be used without consulting other Powers.

Unless and until the principle of using seaplanes over the sea is adopted I can foresee nothing but trouble and loss.

I further see that aerial travel is not sufficiently restful to enable passengers to make continuous day and night journeys until improvements are effected, and I think rather that the trip to India may be extended to six days with comfortable rests at nights, combined with sight-seeing and about ten hours' flying in the day. This should make travel by air ideal and, though it would reduce the speed over the distance, would leave the remaining attractions of flying unimpaired.

THE NEED FOR INQUIRY.

In publishing the foregoing statement one wishes it to be clearly understood that it conveys no reflection on the purely military side of the Air Ministry. That side has been more than well occupied in reorganising the R.A.F. on a peace footing and in cutting down unnecessary expenditure on air stations at home and abroad. One only wishes that it were possible to make public the excellent work which has been done in this respect.

But it certainly does seem that there is reason for a very strict inquiry into the departments which are responsible for this tragic fiasco on the route to Cairo. If this is an example of the official idea of "blazing the trail," one cannot congratulate a department which seems to have succeeded only in marking the route with a series of pylons composed of the pathetically protruding tails of multiple-engined aeroplanes at £10,000 apiece.

Particular notice should be taken of the fact that while the writer of the letter casts no reflections on the machines themselves he is righteously indignant at the condition in which they were dispatched on their perilous journey. And in the kindness of his heart he makes no allusion to the ridicule cast upon British Aviation throughout the Latin world by our lamentable exhibition of seeming incompetence either to build or fly aeroplanes.

THE HENDON SCANDAL.

In this connection one desires to recall the inquiries in this paper, and in the House of Commons, early this year respecting a number of Handley Page machines which were left standing out on the Hendon Aerodrome week after week in the worst of weather. When those awkward questions were made public orders were sent to Hendon to get those machines away at once, and they were distributed to various stations about the country—some of which, one is told, were not only without sheds suitable to house Handley Pages, but were without personnel who knew how to handle big machines.

In some cases the stations to which they were sent refused to take them on charge, and the machines were bandied about from one station to another, left exposed to the weather, damaged by inexperienced handling, and generally deteriorated by ill-treatment. It would be interesting to know how many of those machines which were first damaged by exposure at Hendon (for they were damaged in spite of General Seely's fluent denials) were sent on this jaunt to Egypt.

Will somebody in authority demand the log-books of the ten or more machines which have thus been lost, and make known definitely whether their record was such as to justify their having been selected for such an adventure as an unorganised flight to Egypt.

A WORD TO THE SUPPLY DEPARTMENT.

One is under the impression that an affair of this nature comes within the scope of the Supply Department rather than into the Technical Department's affairs. So perhaps, if an inquiry be instituted, it might be extended to include the state of sundry four-engined machines which are said to have been delivered to the air station at Hawkinge during the past four or five months, and perhaps earlier.

If one is not altogether misinformed there is a scandal of almost equal financial magnitude in this case. No blame attaches to any of the officers or men at Hawkinge, for one is told that while these four-engined machines were being delivered there was no adequate accommodation for them, and that the personnel had no experience in handling or housing big machines. Con-

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sequently they were damaged in hauling them about and in folding the wings, and by not chocking-up the wings when folded. Also they had perforce to be left exposed to the weather and so suffered considerably.

It seems very probable that proper inspection of these machines—which have now perhaps been distributed again to other inadequate stations—may disclose the fact that they, like those which were hustled away from Hendon, are unfit to fly. And if they are, in consequence, logged as unfit, some lives and a considerable sum of money may be saved by preventing people from flying them.

The Supply Department has no reason for being proud of its work during the last year of the war, and still less of its work since the Armistice. It has now, at any rate, an opportunity of justifying its existence.

The Evils of Spoon-Feeding.

Taking it all round, therefore, one is convinced that the less the Air Ministry has to do with Civil Aviation the better. And of all its efforts it is particularly desirable that it should give up that particular form of amusement which it is pleased to call "blazing the trail."

We are now beginning to see the mess it has made of the Australian Government's offer of £10,000 for the first Australian to fly to Australia by butting in and in conjunction with the equally futile Committee of the Royal Aero Club making a straight "go as you please" flight into a cut and dried competition, hedged round by rules and regulations, delayed beyond the proper starting time, and saddled with a time-limit which in itself is bound to force competitors to fly when disinclined and so is more than likely to cause loss of life.

One can recall no other activity in which a Government department has endeavoured to do pioneer work. In exploration, in mining, in steamship transport, in the development of railways, in the installation of telephones, and so forth, in fact in all the activities in which this country has led the way, the trail has been blazed by private or commercial enterprise. Only when Government departments have butted in and tried to take control have we fallen behind other nations.

Government control of adult industries has been sufficiently disastrous. How much more is Government spoon-feeding of an infant industry likely to bring disaster? Judging by the examples recorded hereinbefore, it seems rather as if the Air Ministry resembles an inexpert nurse who, instead of conveying the food to the infant's mouth, merely succeeds in jabbing the spoon into the infant's eye and permanently distorting its outlook on the future.—C. G. G.

AN ANCESTOR OF AVIATION.

It must be a cause of some considerable wonder to many of those who have of late years come to consider themselves as amongst the pioneers of aviation when they are brought face to face with the works of some of the really early students of aeronautics. Unfortunately many of those who are to-day amongst the leaders of aeronautical science are apt to ignore the works of those who laid the foundations of that science.

Thus Mr. Leonard Bairstow, C.B.E., D.Sc., F.R.Ae.S., etc., bears a sufficient reputation of this type to have been selected by the Royal Aeronautical Society to deliver the 1919 Wilbur Wright Memorial Lecture.

In that lecture Mr. Bairstow in a preliminary historical survey of his field credits Sir Hiram Maxim with producing a steam plant weighing half a pound per horse-power, whereas the true figure was 5 lbs. per h.p. He then proceeds to state that the Langley full-size monoplane was wrecked at its launch, probably because it lacked stability, and that it was later flown by Mr. Glenn Curtiss after the original steam plant had been replaced by a modern aero-engine.

In actual fact the Langley monoplane was wrecked on two occasions by fouling its launching gear, and on its flight over Lake Keuka, piloted by Mr. Curtiss, eleven years later, its stability was entirely satisfactory, and the power plant used was that designed for it by Mr. Manley in 1903, and consisted of a 5-cylinder air-cooled radial petrol engine of the type which our enlightened Technical officials are now claiming to have done so much to develop.

With this as an indication of the extent and accuracy of the acquaintance of our leading aeronautical authorities with the history of the achieved facts of past days, there can be no grounds for surprise that the name of Mr. Horatio Phillips should only survive in one, and that a misapplied, case.

Most people know the term "Phillips' Entry" as applied to the formation of the leading portion of an aerofoil, and understand thereby that form of entry which results from beginning the under surface of the aerofoil by a curvature convex downwards, which shortly changes into a curvature in the opposite sense, and now is a standard feature of all modern British high-speed aerofoils.

It is interesting here to recall that in 1911 the N.P.L. authorities pronounced this type of entry to have no appreciable effect on the aerodynamic properties of an aerofoil, whilst in this year of grace we find Lord Weir, on the authority, one presumes, of the same N.P.L. and its offspring, holding up German designers to mild contempt because they never employed an aerofoil section with that characteristic.

The cream of the particular jest, however, is that Mr. Phillips himself disclaims all responsibility for this particular feature, and has himself always considered that the Phillips entry properly so called consisted merely in a leading edge to an aerofoil formed by the junction of a convex upper surface with a flat or concave lower surface.

The early experimental work carried out by Mr. Phillips deserves to be widely known and appreciated.

Mr. Phillips began his experiments some time in the seventies, but so far as can be discovered no account of his results was published before 1885.

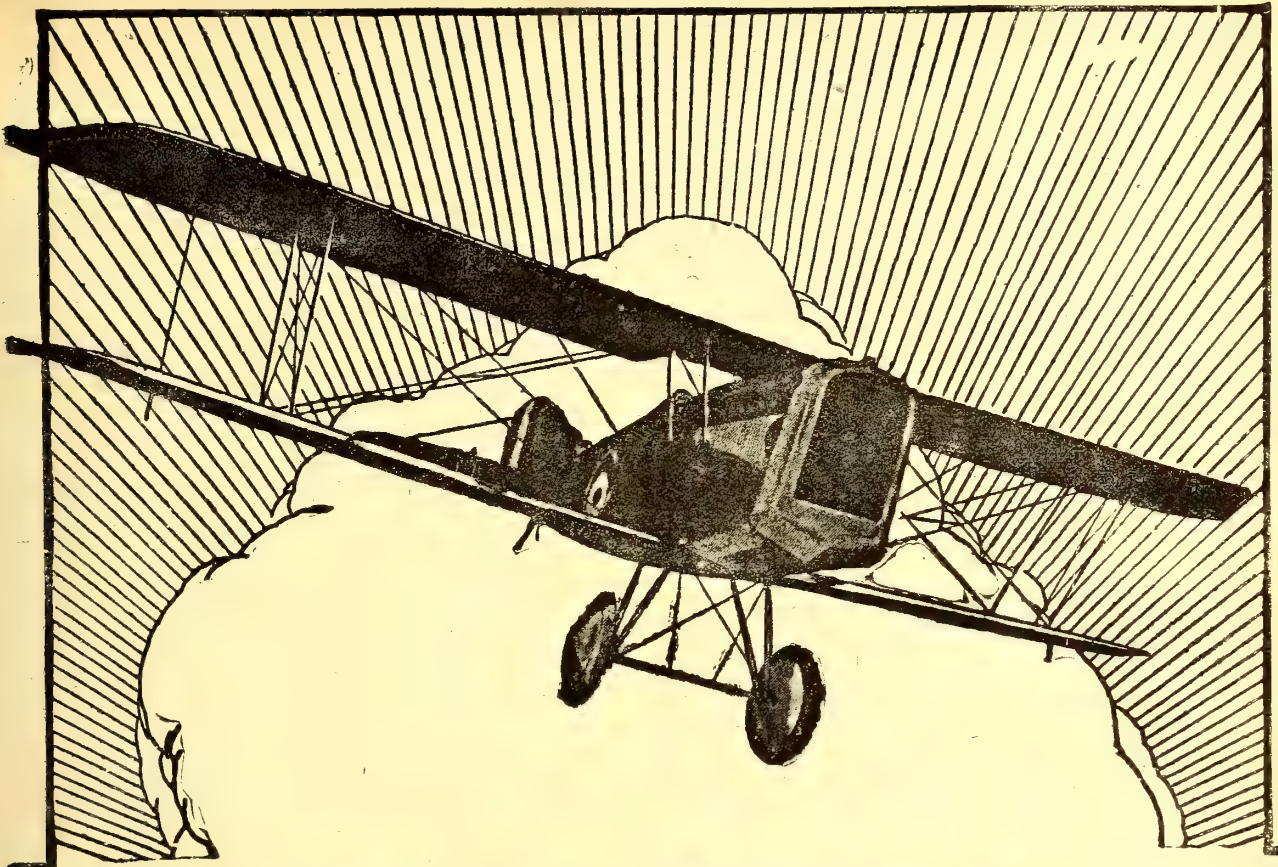
In that year was published the complete specification of a patent (No. 13768 of 1884) entitled "Apparatus for Aerial Navigation," wherein are shown the figures of wing sections which are reproduced here, together with Mr. Phillips' original complete specification.

A.D. 1884.—No. 13,768.—APPARATUS FOR AERIAL NAVIGATION.

COMPLETE SPECIFICATION.

I, Horatio Frederick Phillips, of 31, Chapel Street, Park Lane, in the County of Middlesex, engineer, do hereby declare the nature of my said invention for "Apparatus for Aerial Navigation" and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to means to be used in conjunction with suitable propelling apparatus for raising and supporting an aerial machine or vehicle in the air. For this purpose I provide the machine with a series of narrow blades arranged at suitable distances apart so that air may act independently upon each without disturbance by the others. The object of these blades is to deflect upward air that comes in contact with their forward edges or portions in such a way as to cause a partial vacuum to be created over a portion of the upper surface of the blade thus aiding the air below to support the weight. To this end the blades are made with doubly curved or inclined upper surfaces. The under sides of the blades may be flat or concave in cross sectional form, whilst the upper surfaces may be convex in cross section or of a form bevelled towards each edge. The curvature of the convexity or the degrees of angularity as the case may be will depend upon circumstances.



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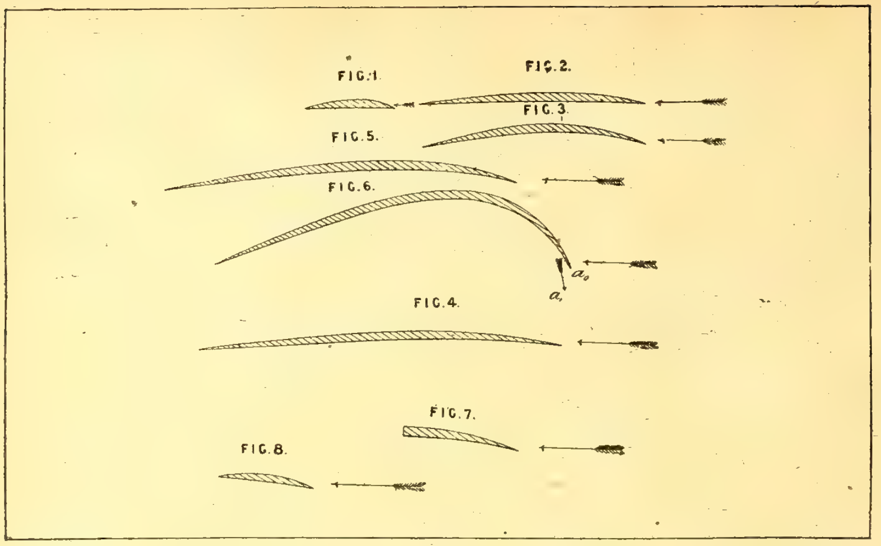

The propellers employed may with advantage be constructed with blades to operate on the same principle.

Upon the annexed sheet of drawings there are shown in cross section various forms of blades according to my invention. Some of these are comparatively narrow, and some are broader, but all are characterised by having doubly curved or inclined upper surfaces, with flat or concave under surfaces. In Figs. 1 and 2 the under surfaces are flat or very nearly so, while the curvature of the upper surface is not great. In Fig. 3 the curvature is more marked. Figs 4 and 5 are broader examples with a moderate degree of curvature both above and below. Fig. 6 shows an extreme case in which the distinguishing features of the invention are probably carried to excess. It, however, serves admirably to demonstrate the phenomenon which it is the object to produce, for if a current of air be made to impinge upon it in the direction of the arrow a_0, it can be shown by means of a delicate gauge, such as a ribbon or thread that an induced current flows in the direction of the arrow a_1. Figs 7 and 8 are also sections of forms used to demonstrate the action of the air upon the blades, and to show that the air is deflected upwards by the forward part of the upper surface and a vacuum is formed on the after-part. If blades of this section be pivoted at their front edges, or at a point in advance of their front edges, and be exposed to a current of air of sufficient velocity coming in the direction of the arrow they will rise into the position shown (with relation to the direction of the current) in the drawings.

It is advantageous that the greatest depth of hollow should be one-third of the total width from the forward or leading edge, and the amount of concavity of the lower surface and convexity of the upper surface should bear a relation to the speed of the air current, when this is possible.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is

1. The use for raising, supporting and propelling aerial machines or vehicles, of blades of the form substantially as deviewed in cross-section, are bounded by one or more curved lines, or by two or more straight lines, or by curved and straight lines, so arranged that a current of air striking the forward edge of the blade at an acute angle is deflected upwards by the forward part of the surface, and a vacuum (or partial vacuum) is formed on the after surface substantially as described.

2. The use for raising, supporting and propelling aerial machines or vehicles, of blades of the form substantially as described with reference to and illustrated in the drawings annexed.

Dated this 11th day of July, 1885.

H. F. Phillips,
W. Lloyd Wise,
46, Lincoln's Inn Fields,
London, W.C.,
Applicant's Agent.

In the same year ("Engineering," August 14th, 1885) there appeared a description of Mr. Phillips' experiments and results, including descriptions of the wind tunnel which he used for tests.

In this tunnel an air flow was secured by the use of a steam jet in an expanding chamber which formed the exhaust end of the wind tunnel itself. This jet and expanding chamber acted in effect as does an injector, and air speeds up to 60 ft. per second were obtained.

A very simple form of balance permitted measurements of lift and resistance to be made.

Mr. Phillips' Discoveries.

As the result of these experiments Mr. Phillips arrived not merely at the essential section necessary for a reasonably efficient aerofoil, but discovered the fact that a serious loss occurred at the tip of a wing which could be reduced by increasing the aspect ratio.

Mr. Phillips also realised at a very early date that the lift of an aerofoil was due to the fact that air was deflected downwards by the aerofoil, and that therefore tandem surfaces were inefficient because the after surfaces ran in the down wash of the forward one.

These considerations led to the adoption of a multiplane construction, which has been aptly likened in form to a Venetian blind, wherein each lath was an aerofoil of the type of section described in his 1884 patent.

On May 5th, 1893, "Engineering" illustrated the machine built on these lines, and described a test made with it running round a circular track, on which occasion the machine lifted a weight of over 400 lbs. to some two or three feet.

In the same article Mr. Phillips' whirling arm, used for making tests at higher air speeds than those possible in the wind tunnel, was described.

It will thus be seen that, although Mr. Phillips has no connection with the so-called Phillips entry, he did discover the essential features of the cambered aerofoil, and measured their qualities with the aid of wind tunnel and whirling arm before most of our present wind tunnel experts were breeched—if they existed at all.—W. H. S.

THE AIR CONVENTION.

Thirteen Allied Powers signed the International Aerial Navigation Convention at Paris on Oct. 13th. Japan and the United States did not sign. The latter would not because in the opinion of their Patent Office certain American patents would not be protected. The United States has six months in which to accept or reject the Convention.

The official "white paper" containing the full text of the Convention can be obtained for 9d. from any law bookseller.

THE DOUGLAS-PENNANT CASE.

The inquiry into the dismissal or retirement of Miss Douglas-Pennant opened on Oct. 14th, 1919, under the presidency of the Lord Wrenbury in a committee-room of the House of Lords. In view of the great length and entire irrelevancy of the opening speech and the first minutes of evidence it is not proposed to summarise the case until the committee has concluded its sittings.

THE ENGLAND TO AUSTRALIA FLIGHT.

Capt. Matthews and Serjeant Kay on a Sopwith biplane, "Wallaby," began their flight to Australia on Oct. 21st, 1919. They left Hounslow at 11.44 a.m.

THE R.N.A.S. AGAIN.

Since the coming of Sir David Beatty (as he is still, for the present) to the Admiralty there has been a persistent revival of the rumour current some time ago that the Admiralty intends to have its own Naval Air Service.

As is fairly well known, Lord Jellicoe's intelligence never quite grasped the possibilities of aircraft for naval purposes, whereas Sir David Beatty was probably the first officer of his seniority in the Navy to appreciate what aeroplanes could do and to encourage the down-trodden and almost discredited R.N.A.S. to renewed efforts.

The revival of the rumour may be merely a case of "the wish being father to the thought," but recent happenings have certainly impressed even the most case-hardened of naval men with the futility of a Fleet which is not strongly equipped with aircraft as part of its own organisation, and though the rumour may have been revived by ex-R.N.A.S. people it is certainly being strongly backed by officers of the Royal Navy.

CONGRATULATIONS.

MANNING.—On Oct. 15th, at Park House, Thrackley, the wife of W. O. Manning, Esq.—a son.

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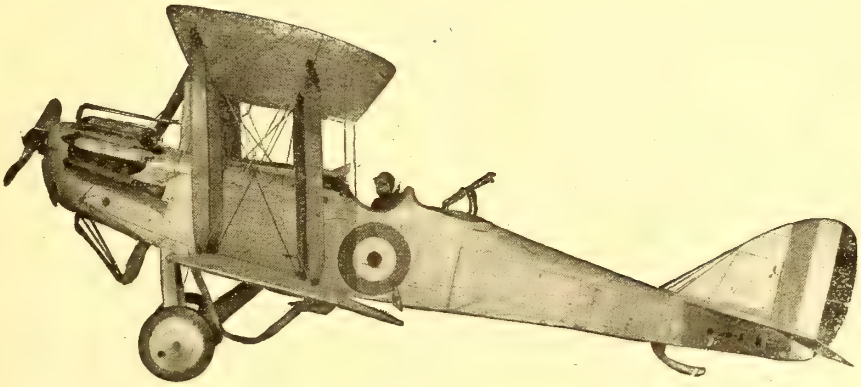

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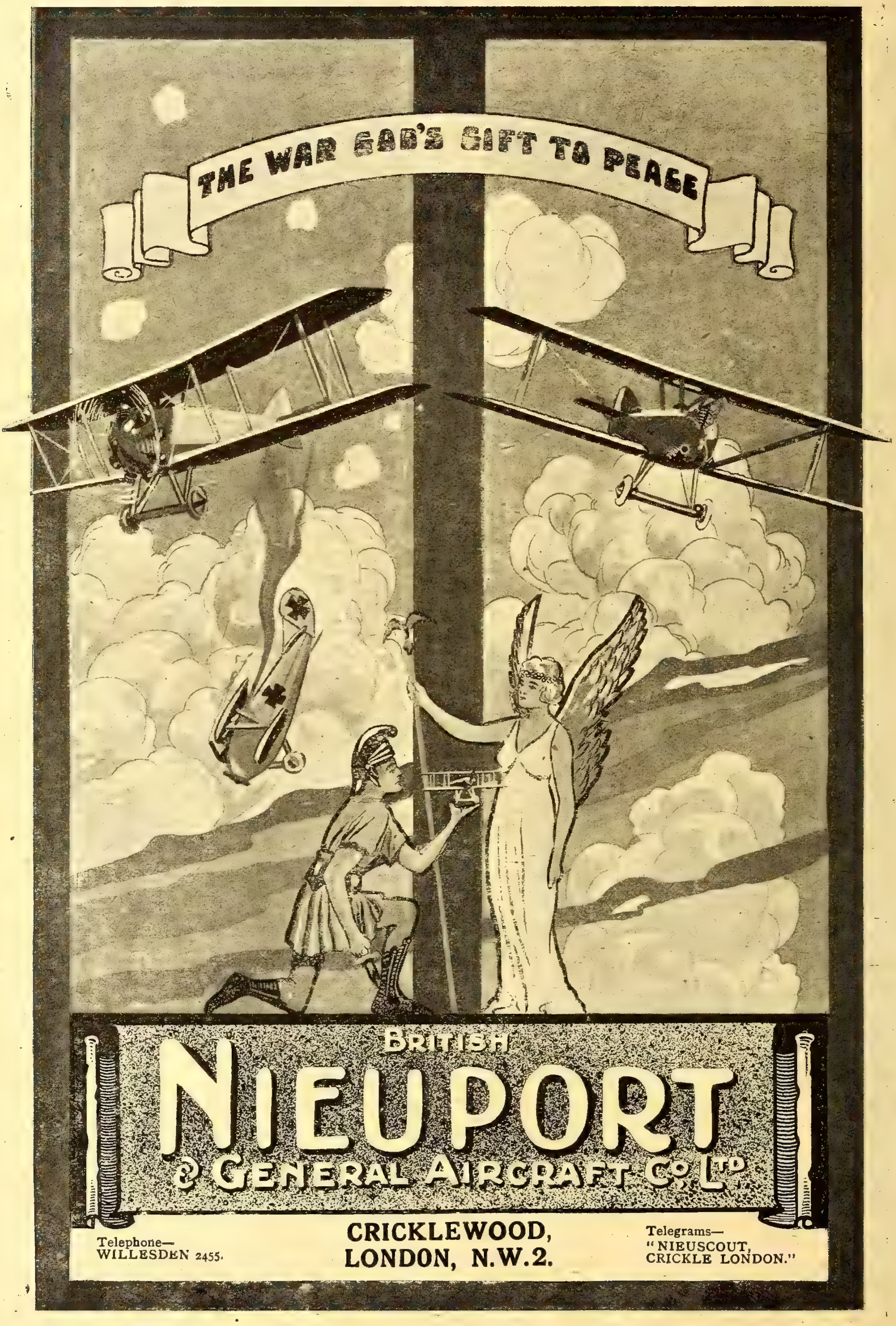
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ON THE RIGHT IS THE SPECIAL CIVILIAN 2-SEATER MACHINE.

NAVAL & MILITARY AERONAUTICS

[The "Official Gazette" notices will be found on page 1486].

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

ST. JAMES'S PALACE, Oct. 18th.

By command of The King Lieut.-Colonel Prince Arthur of Connaught held an Investiture in the Throne Room, St. James's Palace at 11.30 o'clock this morning, on His Majesty's behalf.

The following was invested with the Insignia of THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE:—Officer.—Military Division.—Capt. George Rogers, R.A.F.

His Royal Highness then conferred decorations as follows:—

THE MILITARY CROSS.—Capt. Cecil Marchant, R.A.F.; Lieut. Leonard Dodson (S. Staffordshire Reg.), attd. R.A.F.

NAVAL.

ADMIRALTY APPOINTMENT.

OCT. 20th.—R.A.F.—Flt. Lieut.—D. S. Earp, to "Pegasus" (Aug. 1st).

* * *

From a Supplement of the "London Gazette" of Oct. 7th, 1919, dated Thursday, Oct. 9th, 1919.

ADMIRALTY, Oct. 9th, 1919.

The following dispatch has been received from the Rear-Admiral, Black Sea, on the action in the Caspian Sea off Fort Alexandrovsk on May 21st, 1919:—

July 5th, 1919.

I have the honour to submit the following dispatch on the action off Fort Alexandrovsk on May 21st, 1919, with an account of the circumstances leading up to it and all subsequent operations:—

At the beginning of May reports were being received from various sources that the Bolsheviks had occupied, or intended to occupy, Fort Alexandrovsk. From reports of refugees, prisoners, etc., it was also apparent that the Naval Authorities at Astrakhan were desirous of carrying out an attack on Petrovsk or Baku with the object of obtaining oil, of which they were in urgent need. . . . .

2.—Commodore Norris determined, therefore, to visit Fort Alexandrovsk and to carry out a reconnaissance by means of the coastal motor-boats and by the seaplanes of "A. Yusanoff," supported by the ships of the Caspian Squadron. . .

4.—On May 17th the wind had gone round to west, so that no lee was obtainable on the eastern shore of the Caspian. Consequently (after an unsuccessful attempt to get the seaplanes away) the seaplane carrier had to return to Petrovsk, escorted by "Emile Nobel," who was running short of fuel. By this time Commodore Norris had news of reinforcements in the shape of "Venture," and he cruised off the eastern shores of the Caspian to the southward to await her arrival.

5.—In addition to "Venture" he was joined by "Windsor Castle" and "Emile Nobel," and on the morning of May 21st was cruising in position lat. 44.57 N., long. 50.02 E. Course S.E., speed 5 knots. Detached squadron, consisting of the C.M.B. carriers and seaplane carrier, had parted company on May 20th, with orders to rendezvous off Fort Alexandrovsk. . . .

19.—Later . . . . the detached squadron of C.M.B. and seaplane carriers had arrived at rendezvous, and a seaplane had been sent up to bomb Alexandrovsk. Unfortunately, he had to return owing to engine trouble, and was out of action for 12 hours. He again went up at 15.35, and returned two hours later Bombs were dropped, but no direct hits were obtained. He reported that a large oil steamer was burning as a result of the bombardment of the afternoon. . . .

21.—At 05.25 the seaplane again started for Fort Alexandrovsk and dropped bombs on the shipping in the harbour and small craft machine-gunned. During May 22nd five raids were carried out by this one seaplane with the following results:—

First Raid.—Shipping and Eastern Pier bombed and machine-gunned. No direct hits, but probably some damage done as bombs fell close.

Second Raid.—Shipping bombed. Direct hits obtained on large destroyer of "Finn" class, which sank. One hit on armed merchant cruiser. Ships and piers machine-gunned.

Third Raid.—Barges at eastern and western piers bombed. No direct hits, but bombs fell very close, and damage was probably inflicted.

Fourth Raid.—Shipping bombed. No direct hits. T.B.D. bombed in second raid now completely sunk.

Fifth Raid.—Southern pier bombed. Bombs fell very close. Shipping machine-gunned.

A sixth raid was attempted, but machines failed to rise. Photographs were taken on second and fifth raids.

22.—On the evening of 22nd and on the morning of 23rd a deserted appearance of ships and town was noticed, no one being seen in streets nor on decks of ships. No armed forces or encampments were seen in vicinity. On the first day heavy A.A. fire was experienced, but on the evening of 22nd and morning of 23rd there was none. . . .

24.—On May 23rd, after a night of thick fog, "Kruger" and "Venture" were attacked by two enemy destroyers, who had the range and speed of them, so that they were forced to withdraw. The carriers were informed of the presence of the enemy by W./T., a seaplane was again got out to attack the enemy. Unfortunately the seaplane was unable to locate the enemy destroyers, and finally carried out another raid on Fort Alexandrovsk.

It is probable that the enemy sighted the carriers, as they suddenly turned towards "Kruger" and then made off to the northward. The seaplane ran into a fog on her way back from Fort Alexandrovsk and fell in the water. The officers were not picked up until 32 hours later (see par. 25 below).

25.—On May 24th Commodore Norris in "Kruger," who was short of fuel, with "Sergie" and "Edinburgh Castle," parted company and proceeded to Petrovsk, leaving Capt. Washington in charge of the squadron, which now consisted of "Windsor Castle," "Asia," "Venture," "Bibi-Abat," and "A. Yusanoff," with orders to cruise to the northward and search for the missing seaplane, to ascertain that Chechan was safe, and, when the carriers returned, to make an extended reconnaissance of Port Alexandrovsk. The seaplane was picked up on the evening of May 24th, after which the squadron cruised between Port Alexandrovsk and Chechan until the carriers arrived.

28.—I have the honour to call particular attention to the services rendered by the following officers of the Royal Air Force who between them carried out five raids in one seaplane on the same day with excellent results, and attempted a sixth, and also the services of Lieut. Chilton, R.N.R., commanding "A. Yusanoff," for his able handling of the ship and organisation which allowed this to be done.

Pilots—
Sec. Lieut. Howard Grant Thompson.
Capt. John Archer Sadler.
Sec. Lieut. Robert George Kear Morrison.
Observers—
Lieut. Frank Russell Bicknell.
Sec. Lieut. Frank Leslie Kingham.
Sec. Lieut. Henry Godwin Pratt.

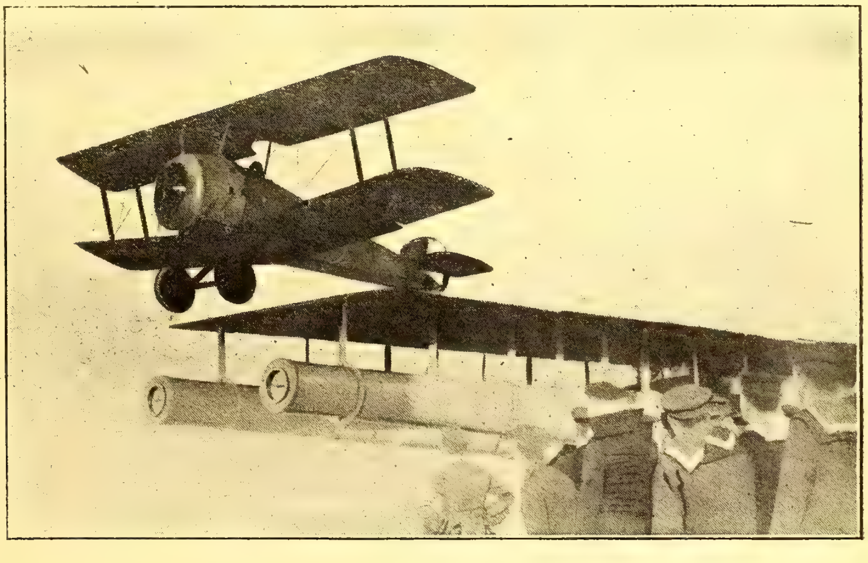
(Signed) M. SEYMOUR, Rear-Admiral.

* * *

According to the "Times" Naval correspondent it is the intention of the Admiralty to allow a number of the surplus junior Naval officers to transfer from the Royal Navy to the Royal Air Force. No official confirmation has been received, but the article in the "Times" gives the following particulars:—

"The junior officers of whom the Air Ministry are prepared to take a certain number must have passed through Osborne and Dartmouth, and must be over the age of 18½ years and under the age of 20 on Feb. 1st next. They will be admitted to the Royal Air Force College without examination and without being called upon to pay fees, apart from the cost of books and instruments. Each applicant for admission under the new arrangements will be required to pass a

AVIATION IN THE ROYAL NAVY.—A Sopwith Camel (130 h.p. Clerget engine) getting off from a platform laid over the guns of one of the larger battleships. The machine apparently has her tail down when she leaves the platform. At the best this method of using ship-planes is unsatisfactory, as the platform, being only a temporary affair, must be removed when the flight is finished. One wonders when the Admiralty will awake to the possibilities of other methods of launching ship-planes.



medical test prescribed by the Air Council, and to appear before an interviewing board.

In the event of an accepted candidate being found unsuitable for flying within six months of the date of entry into the college, he will return to the Naval Service, but it must be understood that with this exception candidates leaving the Royal Air Force for any reason will have no claim to be taken back into the Navy.

Those who become cadets at the Air Force College will be required to undergo instruction there for only one year, instead of the two years required of ordinary cadets, and they will receive pay at the rate of 10s. a day.

The successful candidates will enter upon their new studies probably next February, but it is not stated whether this avenue of transfer from the Navy to the Air Force will remain open after that date. The written consent of the officer's parent or guardian to his transfer, if selected, has to be given before his application can be entertained.

MILITARY.

The Casualty List.

Reported on Oct. 16th.

Previously reported Missing, now reported Killed.—Abbott, Sec. Lt. T. W., R.F.C

Cooksey, Sec. Lt. K. B., R. W. Kent R., attd. R.F.C.

Williams, Sec. Lt. C. P., R.F.C.

GREAT BRITAIN.

East Fortune.

It is rumoured in the daily Press that the Air Ministry are about to abandon the aerodrome at East Fortune, Haddingstone, and that all plant and material will be moved to another aerodrome in Yorkshire. It is also said that H.M.A. R.29 is to be broken up.

In connection with this the Edinburgh "Evening News" of Oct. 14th says:—

"A great deal of fuss is being made regarding the removal of the East Fortune Aerodrome. The County Council of East Lothian has passed a resolution of protest. We are all for giving Scotland a share of the Services. Scotland in pre-war times never was well-treated by the Army or the Navy, but the period has come when we must put our likes and dislikes aside, and only spend money where it is necessary.

"One of the strategists of the Council, a Baronet, said it was of essential importance that such a defensive air station should remain—not only for the protection of the Fleet, which had one of its most important bases at the Firth of Forth—but also for the safeguarding of Edinburgh and the east of Scotland generally. This expert might have been a little more definite in his opinion. Who is the enemy we are now preparing against? Is it Germany? We thought the German Fleet was at the bottom of Scapa Flow. We thought the German Army was to be reduced to a few ten thousands of men.

"Air stations, Fleets, and Armies are all based on policy, and assuredly to-day there is no likelihood whatever of war in the North Sea in our time. The scene may be farther afield in the Atlantic or the Pacific, but that is an eventuality which we may sincerely hope will not trouble this generation or the next. It is no use calling on the Government to economise if every step they take is bitterly criticised by interested public bodies."

A Permanent Commission.

It is stated unofficially that the Royal Air Station at Howden, Yorks, is to remain as a permanent base for airships, principally in connection with the Coast Defences. It is also said that much of the personnel and matériel from the East Fortune Aerodrome will be taken to Howden, including H.M.A. R.29. Another unofficial statement of this kind announced the immediate break-up of R.29.

A new shed is in the course of erection at this station, and is now approaching completion. It has a length of 750 ft. and a height of 120 ft., and is built of corrugated steel. The shed will be capable of housing such airships of the R.34 and others of that size.

Milton, Berks.

The Milton (Berks) R.A.F. Depot is expected to close down during November. Civilian labour is to cease and notices to this effect have been posted. One-seventh of the men employed there will be discharged weekly.

A "Business" Flight.

Mr. N. St. J. Philby, a British Political Officer, being ordered to Arabia to settle the dispute between two native chiefs, flew from Folkestone to Cairo, a distance of 2,100 miles, in 123 hrs.

A Misplaced Landing.

A Vickers "Vimy" bomber made a trial flight at Farnborough recently. The pilot intended to land on the Common, but he landed on the top of a taxicab instead. The cab was somewhat crushed, but neither the pilot, the cab-driver, or his passengers were injured. It is stated that the aeroplane escaped damage, but one cannot infer that the machine flew off the taxicab.

Souvenir Hunting.

Twelve residents of Hildenborough, near Tonbridge, were charged at the local police court on Oct. 21st with being in unlawful possession of equipment taken, it is alleged, from a Service aeroplane, which after making a descent in the neighbourhood was left unattended in a field.

The Freedom of Carnarvon.

The Town Council of Carnarvon have decided to confer the freedom of the borough on Wing. Cmdr. Lionel B. Rees, V.C., O.B.E., M.C., A.F.C., R.A.F., and to present him with a sword of honour, as a mark of appreciation of his distinguished services in the war.

CHILE.

According to the "Times" of Oct. 21st, the Chile Aerial Forces Department has decided to accept the offer of a British house to establish works for the construction of aeroplanes in Chile.

DENMARK.

The Danish correspondent of The Aeroplane writes:—

On board the Danish cruiser "Heimdal," which has just left Copenhagen for England, the commanding officer of the Naval air station at Copenhagen, Lieut. Grandjean, travels together with two Navy officer pilots, Lieut. Victor and Lieut. Abrahamsen, of the Reserve, with the object of studying Allied Naval aviation. Having introduced the two last-mentioned officers, who are to undergo further instruction of some months' duration at British Naval air stations, Lieut. Grandjean continues to France to learn of the French Naval air stations.

At the same time a number of Army pilots are to go for further instruction to France on Nov. 1st, being the chief pilot, Lieut. Forslev, who is to study aeronautic science for two years at "L'Ecole Superieur d'Aéronautique à Paris," while the practical training shall last three to four months of Lieuts. Folkmar and Botved, Lieuts. of the Reserve Herschend and Sætter-Lassen, and Serjts. Erlind, Bjarkow, Johansen, and Larsen, as well as the chief of the aircraft workshops department of the Army Technical Corps, the Army pilot Nielsen and his assistant Christoffersen.

FRANCE.

General Duval, Director of Military Aeronautics, has decided that Nimes will be an aero station in the future network of aerial services in France.

An Exploit of Captain Hirschauer.

Captain Hirschauer, commanding the technical branch of Military Aeronautics, piloted on Oct. 1st an airship, an aeroplane, and a free balloon in a period of four hours. At 8.30 a.m. he left Villacoublay on an aeroplane and landed again at 9.0 a.m. An hour later he left Saint Cyr alone in a spherical balloon, which he brought down at Saint Nom-la-Bretèche at 10.30 a.m. He arrived at Saint Cyr by motor-car at 11.30 a.m. and took to the higher atmosphere again in a Zodiac airship, type V.Z 10, at noon, taking the wheel himself. This flight concluded at 12.30 p.m.

Captain Hirschauer took his three certificates on the following dates:—Spherical balloon, 1911; airship, 1912; and aeroplane, 1915. It is curious that no other pilot has made a similar effort in piloting as was done by Captain Hirschauer in the above-quoted case.

A Skirmish in Morocco.

On Oct. 3rd a food convoy proceeding to Menitra was attacked to the west of Djebel Aarar by a party of about 1,000 insurgents commanded by Ou el Amdi and Fets Ali Ataouch. The French levies fought well and drove off the enemy, causing them to leave 102 dead on the field. The French casualties were 11 levies killed and 27 wounded. French military aeroplanes assisted and contributed largely to the complete rout of the enemy.

The Start of the War.

In October of last year a French court martial sentenced an engineer named Unné to five years' imprisonment and a fine of £1,300 for having given money to officers and non-commissioned officers charged to superintend the trials of aviation engines. M. Unné was in America when the sentence was passed, but he afterwards appeared before the court martial which acquitted him after hearing his appeal.

He told the strange story that towards the end of July, 1914, an aeroplane belonging to the Salmson Co., piloted by a M. Laporte, started on a journey from Paris to Constantinople. The machine had a breakdown in Bavaria, and M. Unné was sent to repair the damage.

The German authorities prevented M. Laporte from con-

SPEED

A racing Airco Machine, piloted by Capt. Gathergood, leaving for Paris at 12.30 p.m. with specially urgent dispatches, completed the flight from Hounslow to Le Bourget in 1 hour 20 minutes; a rate of 180 miles an hour, the greatest speed attained so far on the London-Paris route.

Extract from the "Times,"
Friday, Oct. 17, 1919.

AIRCO

THE AIRCRAFT MANUFACTURING CO., LTD.,

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London Office: 27, BUCKINGHAM GATE, LONDON, S.W.1.
Works: THE HYDE, HENDON, N.W.9.

tinuing his journey, and after a lapse of two days gave him permission to return to France on August 1st, specifying the route he should follow. As he was flying over Nuremburg, guns opened fire on him, but he succeeded in reaching France.

The German Embassy said that the town had been bombed by a French aeroplane, which was an act of war. This was given as Germany's reason for declaring war on France.

The story seems worthy to set alongside some of the stories which have been told at British official enquiries.

HOLLAND.

A Bristol Fighter in the Dutch Army.

A Bristol fighter belonging to the Dutch Army is now at Hendon. It was flown from Holland to England some time ago by Lieut. Versteegh, Royal Netherlands Army, with an officer-observer as passenger. The machine has been flown to various parts of England during its stay in the country. One of these visits was to its birthplace at Bristol. In view of the common arguments as to the durability of aircraft it should be here stated that this Bristol fighter is two years old and has been in continuous use both on the Western Front and in Holland.

A red cock has been painted on the sides of the fuselage by those in whose charge it is.

RUSSIA.

Operations in Russia.

Many and conflicting are the reports of the fighting in the Petrograd district, some accounts even stating that the town has been taken from the Bolshevists. The more reliable reports state that on Oct. 17th the British Royal Air Force attacked the fortress town of Krasnaya Gorka in force, while Kronstad was practically neglected, being visited by a solitary aviator. On Oct. 16th British aviators reported that the Bolshevists were retiring in disorder from Krasnaya Gorka on Petrograd, but, as will be seen, the Bolshevists were still in the former town on the 17th. On Oct. 19th British aviators reported the Red flag was again flying over Kronstad.

SWITZERLAND.

The Italian correspondent of The Aeroplane writes :—

This country would appear to possess six Military aerodromes in full equipment. They are Berne, Dübendorf, Neuchatel, Geneva, Zurich, and Montana, which is also one of the highest health resorts. Lausanne and Bellingona are also coming centres. A regular series of propaganda tours is to start shortly under military control.

Flying at less than 3,000 ft over big towns is to be avoided in case of disasters. A feeling similar to the anti-motor rabies is said to exist towards aeroplanes, though no accident seems ever to have occurred.

The Haefeli seems the most liked of Swiss machines. It is an 8-metre span by 6 metres long Farman type, with a 150 M.F.W. (Winterthur), with which it can do 180 kilos. per hour. The weight is put at 1,100 kilograms fully loaded with two on board.

U.S.A.

A Criticism.

The correspondent of the "Daily Telegraph" writes from New York on Oct. 16th as follows :—

"Some criticism is being heard, both in the newspapers and in Congress, over the fact that the aeroplane race across the Continent and back, which, it is expected, will be won to-morrow evening by Lieut. Maynard, 'the flying parson,' has so far resulted in nine deaths and many more or less serious injuries.

"According to Brig.-General Mitchell, chief of operations and training in the Army Air Service, all the aviators killed were flying De Haviland Fours, which, he declared, were faulty and a type of plane not wanted by the Service.

"He criticised the De Haviland as a compromise between a bomber and an observation plane, and said the pilot was placed in an unnecessary dangerous position between the unprotected petrol tank and the engine, while the plane altogether was too delicate near the ground. Out of 53 De Havilands entered, only 31 now remained in the race."

[The correspondent of the "Telegraph" might have explained, if he had known, that the D.Hs. used were American-built, to designs altered (or, as some people say, mangled) in America to take the Liberty engine. The result, one gathers, is a machine which is thoroughly nasty to fly, being heavy on its controls, and very much faster in landing than the original machine as designed by Capt. de Havilland. Therefore, one can safely say that there is nothing in General Mitchell's criticisms which reflects adversely on the Aircraft Manufacturing Co., Ltd, or its talented chief designer.—Ed.]

The Trans-Continental Air Race.

Despite a Reuter message from New York on Oct. 12th stating that the return flight across the Continent would start on Oct. 20th, unless the race was discontinued, Lieut. B. W. Maynard left San Francisco for his return flight to New York on Oct. 14th at 1.22 p.m. That night he landed at Battlemountain, in Nevada, having crossed the Sierra Nevada Mountains, his worst obstacle, and covered 356 miles.

Capt. Delavergne, the French air attaché, has had more bad luck. He started the race on Oct. 8th in a machine piloted by Lieut. D. B. Gish, which caught fire in the air. Afterwards he started again as a passenger in a Martin bomber.

This machine carried four passengers and was piloted by Capt. Roy N. Francis. In Nebraska they ran into some telegraph wires and wrecked the machine. It is reported that none was seriously hurt.

A Reuter message from New York dated Oct. 14th stated that three more competitors had arrived at San Francisco and three more at Mineola.

Lieut. B. Maynard, the first aviator to complete the return journey across the continent, landed at Mineola at 1.50 p.m. on Oct. 18th. The unofficial computation of his flying time from San Francisco is 25 hours, which is 15 minutes less than the time he took to fly from Long Island to San Francisco.

On his arrival at Mineola he was greeted by a large crowd and had to shake hands with about a thousand persons before the aerodrome officials were able to get near him to obtain his log book. At Omaha Lieut. Maynard lost 19 hours while obtaining a Liberty engine from the wrecked Martin bomber of a competitor, his own engine having given out.

Lieut. Maynard has stated that now the race is over he intends to leave the Army and return to his country parish.

TO NO. 8 NAVAL SQUADRON.

A Reunion Dinner of No. 208 Squadron R.A.F. (No. 8 Naval Squadron) will be held on Nov. 1st. This dinner, as distinct from Squadron dinners held hitherto, is a re-union of officers and men, and is not for officers only. Already over 100 of the former personnel of No. 8 Naval Squadron have signified their intention of being present, and it is hoped that at least as many more will be present on Nov. 1st.

The price of the dinner, without drinks, is seven and sixpence. Those who wish to attend are invited to communicate immediately with Mr. F. Hammond (late of the Transport Section, No. 8 Squadron), at No. 10, Ashbourne Grove, East Dulwich, S.E.

The Chair will be taken by Wing-Commander Bromet, D.S.O., O.B.E., the first Commanding Officer of No. 8 Squadron, supported by Major Christopher Draper, D.S.C., and Squadron-Leader Compston, D.S.C., D.F.C., Captain Jordan, and other present and former officers of the Squadron.

A GRAIN DINNER.

The first annual dinner of officers who were stationed at the Isle of Grain Air Station during the war is to be held at the Café Royal Restaurant, Regent Street, on Saturday, Nov. 8th.

Will all officers who formed part of the Grain complement, and who wish to attend, but who have not received direct notification of the event, communicate with Capt. L. A. T. Pritchard at Wadham College, Oxford?

Tickets are 15s. each, exclusive of wine, and applications must be made not later than Oct. 29th. Dress, dinner jacket or uniform.

It is hoped that the traditions of Grain Mess on festival occasions will be fully maintained on this occasion, and that its old members will turn out in full force to do their bit.

[The heading of this paragraph refers to the place and not to the menu.—Ed.]

THE CRY OF THE DEMOBILISED.

The following letter has been received :—

Sir,—We were all demobbed six months ago; our average age is 36; we all gave up everything and joined in 1915. We have all been hurt in some way; some of us have wooden legs. We all registered at St. Ermin's, Horrex's, and Dashwood House for jobs; nothing doing. Now, the Air Ministry advertise in the "Morning Post" for ex-Officers.

What's the use of St. Ermin's, Horrex's and Dashwood House? We give it up, but we want JOBS.

(Signed) "Six Ex-Officers."

[Though it is not customary to take any notice of anonymous letters, this is published in the hope that one or more of the Six will communicate personally with the Editor of The Aeroplane. The answer to the question has still to be discovered.—Ed.]

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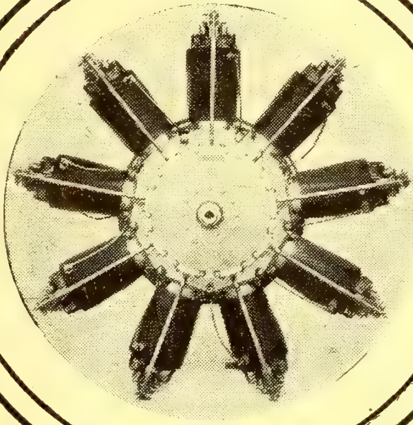

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ROYAL UNITED SERVICE INSTITUTION.

Among the lectures to be delivered at the Royal United Service Institution during the autumn and winter is the following :—

Dec. 3rd.—"The Air Force." By Air Commodore H. R. Brooke-Popham.

This lecture will begin at 3 p.m.

THE ROYAL AERONAUTICAL SOCIETY.

The following programme of lectures has been arranged for the 65th Session of the Royal Aeronautical Society. The meetings occur in each case at the rooms of the Royal School of Arts, 4, John Street, Adelphi, London, W.C., at 8 p.m..

Wednesday, Oct. 29th.—"The Static Head Turn Indicator for Aeroplanes," by Sir Horace Darwin, K.B.E., M.A., F.R.S. Chair to be taken by Brig.-Gen. R. K Bagnall Wild, C.M.G., C.B.E., R.E.

Wednesday, Nov. 12th.—"Some Physical and Psychical Effects of Altitude" by Chas. Atkin Swan, L.R.C.P., M.R.C.S., M.B., Ch.M. Chair to be taken by Sir W. Arbuthnot Lane, Bart., C.B., F.R.C.S.

Wednesday, Nov. 26th.—"Some Kite Balloon Experiments," by Griffith Brewer. Chair to be taken by Brig.-Gen. E. M. Maitland, D.S.O.

Wednesday, Dec. 10th.—"Aircraft Undercarriages," by J D North. Chair to be taken by Lieut.-Col. M. O'Gorman. C.B.

Visitors may attend the ordinary meetings on the introduction of a member of the Society. Applications for tickets should be made to the Secretary at the offices of the Society, 7, Albemarle Street, London, W.1.

ROYAL AERO CLUB NOTICES.

Society of British Aircraft Constructors and the Royal Aero Club.—A meeting of the Joint Standing Committee of the Society of British Aircraft Constructors and the Royal Aero Club was held at the Royal Aero Club, 3, Clifford Street, London, W.1, on Wednesday, Oct. 8th, 1919, when there were present :—Royal Aero Club : Lieut.-Col. F K. McClean, in the Chair, Lieut.-Col. Alec Ogilvie and Harold E. Perrin, Secretary (Representing Royal Aero Club), Society of British Aircraft Constructors : Capt. P. D. Acland, Mr. Hamilton Fulton. In attendance : Mr G. Holt Thomas and Charles V. Allen, Secretary (Representing Society of British Aircraft Constructors).

Australian Flight.—It was reported that the alighting ground at Singapore was on the Race Course and from the information received from General Borton, who had surveyed the route, it was considered suitable.

Royal Aero Club Seaplane Competition.—It was decided to recommend that the Competition which had been postponed owing to the Railway Strike, be further postponed till next year.

[It will be noticed that none of the representatives of the S.B.A.C. at this meeting were members of any of the firms which had entered for the Schneider Cup competition, or of firms which have been associated in the past with the design or construction of seaplanes other than big flying-boats. Also it will be noted that none of the representatives of the Royal Aero Club has been closely associated with modern seaplane work.—Ed.]

Special Committee Meeting.—A Special Meeting of the Committee was held on Wednesday, October 15th, 1919, when there were present : Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S., in the Chair, Mr. Ernest C. Bucknall, Lieut.-Col F. K. McClean, Lieut.-Col. J T. C. Moore-Brabazon, M.P., Lieut.-Col. Alec Ogilvie, Group Captain C. R. Samson, C.M.G., D.S.O., R.A.F., and the Secretary.

Royal Aero Club Seaplane Competition.—The recommendation of the Joint Standing Committee of the Royal Aero Club and Society of British Aircraft Constructors was received, and it was decided to postpone the Competition till next year.

THE FLYING SERVICES FUND COMMITTEE.

A meeting of the Flying Services Fund Committee was held on Friday, October 17th, 1919, when there were present : Group Captain C R. Samson, C.M.G., D.S.O., R.A.F., in the Chair, Mr. Chester Fox, Squadron-Leader T. O.'B Hubbard, M.C., R.A.F, and the Secretary.

Grants and Allowances.—The following Grants and Allowances were made :—(33) An allowance of £2 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Flying Corps killed on active service (89) An allowance of £2 a month for six months to the widow of a Private in the Royal Flying Corps killed on active service. (119) An allowance of £2 a month for six months to the widow of a Flight Sergeant in the Royal Air Force who died on active service. (122) The School Fees up to £10 of the sons of the widow of a 2nd Class Air Mechanic in the Royal Flying Corps killed on active service. (159) An allowance of £2 a month for six months to the mother of a 2nd Class Air Mechanic in the Royal Air Service killed on active service. (168) An allowance of £3 a month for six months to the mother of a Private in the Royal Air Force who died on active service.

(173) An allowance of £2 a month for three months to the widow of a 3rd Class Air Mechanic in the Royal Air Force who died on active service. (190) An allowance of £2 a month for six months to the mother of a 2nd Class Air Mechanic in the Royal Air Force who died on active sevrice. (254) An allowance of £2 a month for six months to the father of a 1st Aircraftsman in the Royal Air Force who died on active service. (261) A grant of £14 12s. 6d., an allowance of £3 a month for six months, and the school fees of the son of the widow of a Corporal in the Royal Air Force killed on active service. (266) An allowance of £1 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Air Force who died on active service. (267) A grant up to £31 10s. to a Flight Cadet in the Royal Air Force incapacitated on active service.

(269) An allowance of £2 a month for six months and the school fees of a daughter of the mother of a Sergeant in the Royal Air Force killed on active service (270) An allowance of £2 a month for six months to the mother of a Corporal in the Royal Air Force who died on active service. (271) A grant of £5 and an allowance of £4 a month for six months to the widow of a Sergeant in the Royal Air Force who died on active service.

COUPE DEUTSCH DE LA MEURTHE.

The Aero Club de France has provisionally awarded the Coupe Deutsch de la Meurthe to M. Sadi Lecointe, who completed the circuit of about 200 kilometres embracing Terrasse de St. Germain, Senlis, Meaux, Melun, Terrasse de St. Germain, on October 15th, 1919, at an average speed of 249 kils. 719 m. an hour. In order that a new Competitor may become the provisional holder of the Cup, it is necessary for this speed to be beaten by one-tenth.

[The speed is equal to about 155 m.p.h., so that to become the holder of the Cup the next competitor must do at least 170½ m.p.h —Ed.]

GREAT BRITAIN TO AUSTRALIA FLIGHT.

The following are the entries for the £10,000 Prize offered by the Australian Government for a flight from Great Britain to Australia :—

Pilot & Navigator	Crew.	Machine.	Engine.
Capt. Cedric Ernest Howell, D.S.O., M.C., D.F.C.	Henry Fraser (Mechanic)	Martinsyde	275 h.p. Rolls-Royce Falcon
Capt. George Campbell Matthews	Srgt. Tom Kay (Mechanic)	Sopwith	350 h.p. Rolls-Royce Eagle 8
Capt. Ross Macpherson Smith	Lieut. Keith M. Smith, R.A F. (2nd Pilot) Sergt. J. M. Bennett Sergt. W. H. Shiers (Mechanics)	Vickers-Vimy	Two 350 h. p Rolls-Royce Eagle 8
Pilot.			
Lieut. Valdemar Rendle	Lieut. D. R. Williams (2nd Pilot) Capt. G. H. Wilkins (Navigator) Lieut. G H. Potts (Engineer)	Blackburn Kangaroo	Two 250 h.p. Rolls-Royce Twin Falcon
Lieut. Roger Douglas, M.C., D.C.M., A.F.C.	Lieut. J. S. L. Ross, A.F.C. (Navigator)	Alliance	450 h.p. Napier Lion

Captain Matthews, on a Sopwith, commenced his flight to Australia on an attempt to win the Prize of £10,000 offered by the Australian Government, on Tuesday, October 21st, 1919. Prior to the start, the machine was marked by the officials of the Royal Aero Club, and his official starting time was 11.44 a.m., taken by Mr. Stevenson of the Royal Aero Club.

PRESENTATION TO THE CLUB.

The following book has been presented to the Club by Major C. C. Turner :—"The Struggle in the Air, 1914-1918." By Major C. C. Turner. (Published by Edward Arnold.)

TO 98 SQUADRON.

Can any member of 98 Squadron, R.A.F., give any definite information concerning the fate of Capt. E. B. G. Morton, "A" Flight, 98 Squadron (formerly of 49 Squadron)?

On the afternoon of July 28th, 1918, Capt. Morton, who was flying a D.H.9 No. 1717, with Lieut. Frank Shaw, M.C., as his observer, left to carry out a special bombing raid, but his machine did not return. The formation was attacked by 15 enemy scouts shortly after crossing the line, and Capt. Morton's machine was observed flying at about 500 feet and doing a slow spiral into a small wood, or clearing between woods, S.W. of Dormans on the Marne. Probably in the southern half of a circle described at a radius of five miles with Dormans on the Marne as a centre. Probably near Soilly and probably within two miles of the south bank of the river. The observer who saw Capt. Morton's machine descending says that about 10 seconds after landing the machine burst into flames.

If there are any officers or men of 98 Squadron who can furnish any further particulars as to the subsequent fate of Capt. Morton such information will be most gratefully received by his parents. Any communications may be addressed to the Editor, at 175, Piccadilly, W 1.

POLICE PERMITS AND THE PARIS SHOW.

Those who have had experience of the interminable delays and annoyances of getting police permits in Paris and other foreign cities will be interested to hear that M. André Granet, the Commissaire Général of the Paris Aero Show, which opens on Dec. 19th, 1919, has made arrangements with the Prefect of Police that exhibitors at the Aero Show and technical journalists visiting the Exhibition will be given special facilities for obtaining the necessary police-passes.

It will be remembered that at the Amsterdam E.L.T.A. Exhibition, the Chief of the Police in Amsterdam very kindly installed a special police office in the Exhibition grounds at which foreign visitors to the Exhibition on business were able to obtain the necessary permits without more than a few minutes' delay. It has been found impossible to do precisely the same thing in the case of the Paris Aero Show, but the Committee of the Show has at any rate succeeded in obtaining a very considerable concession from the Prefect of Police in Paris

Instructions as to the method of utilising the facilities afforded can be obtained from the office of M André Granet at the Show itself.

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If the subscriber already has a copy of FLYING COLOURS, and would wish to take advantage of this offer, then he may secure McCudden's "Five Years in the R.F.C." **(7s. 6d.)**; Richthofen's "Red Air Fighter" **(3s. 6d.)**, and Gill's "The Aerial Arm" **(6s. 6d.)** at half price, *i.e.* **8s. 9d.** the three, plus the year's subscription to the Aeroplane.

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THE WEEKLY COMMENTARY.

In a leading article "Strasbourg" discusses the alleged energy and enterprise of the British Races, and draws therefrom a comforting conclusion.

In spite of that inverted attitude of mind which characterises so many of this writer's utterances, there is an appreciable groundwork of truth beneath his arguments.

The machine built and designed by the Sopwith Aviation and Engineering Company for the Australian flight is described and illustrated in this issue.

The Westland Aircraft Company's products form the subject of this week's instalment of "Modern British Aeroplanes."

An interesting instrument of American design which automatically stops the engine of an aeroplane in the event of the airscrew breaking is described on page 1472.

An important letter from Prof. G. H. Bryan, dealing with the status of the newly formed Institute of Aeronautical Engineers, is printed on page 1454.

ENERGY AND ENTERPRISE.

By "STRASBOURG."

There exists a legend to the effect that the British as a nation are generally afflicted with the qualities of energy and enterprise. This legend appears to be generally believed, not only by the British themselves but even more emphatically by a fair proportion of the world at large, and it must therefore be assumed that it has some foundation in fact.

Actually, if the facts are examined carefully, it will be found these two qualities—very carefully concealed—are largely present in the British races. A casual consideration of the habits of the Londoner in the passages of an Underground Railway station under normal conditions would suggest that, if the Electric Railway Companies provided plentiful sleeping accommodation at their stations, they might well dispense with one-half their train services. Similarly, the habits of the average London pedestrian suggests as a simple solution of the street traffic congestion troubles the slinging of hammocks between all lamp-posts.

On the other hand, the sight of these same sleep-walkers attempting to board an already full 'bus, or to insert themselves into a Tube carriage whose sides are already bulging from the excess pressure of their human content, appears entirely to contradict the conclusions to which the preceding phenomenon seem to point.

The recent railway strike again affords instances innumerable of those who found it practically impossible to reach their place of business punctually when transport was in normal order, but who turned up smiling and punctually when the whole transit arrangements were dislocated.

In exactly the same way the manners and customs of the Englishman in the wild and desolate ends of the earth, and those of that same Englishman after he has successfully made the desert to bloom like the rose and has thereby amassed a fortune sufficient to maintain him in comfort at Cheltenham, seem to suggest that the British generally are afflicted with a Jekyll-and-Hyde-like duality of character.

In this connection an early memory arises. My father was discussing, with the head of a well-known Glasgow engineering firm, the choice of a works whereat I was to be apprenticed. The Glasgow engineer offered introduction to a firm he considered suitable, but added, "If he were my son, I'd tear the seat out of his trousers and tell him not to come home till he'd got a job."

This touches the essential fact that the Britisher, confronted with a real difficulty, is spurred to action and is then capable of great things. An enterprise which calls for nothing more than a little industry and attention bores him stiff and he sleeps over it. This is the explanation of the fact that that same Englishman who habitually loses his way in an Underground Railway station invariably successfully locates the right platform at Liverpool Street, even if he has never seen the place before.

This peculiarity extends much farther than to the purely personal habits of the members of our race. It is strikingly reflected in the business methods of our great industrial corporations.

Thus the appalling inefficiency of our railway system is easily accounted for when it is remembered that even a British Government successfully improvised a reasonably adequate substitute during the late strike. It is obviously so simple an affair to run such a service that no one in this country will trouble to do it unless some serious and abnormal difficulties are introduced into the problem.

When, therefore, one comes to consider the present state of aerial transport in this country and the condition of the Aircraft Industry, one is forced to the conclusion that the operation of commercial air services as a paying proposition must be extraordinarily simple. If there were real difficulties in the way, British air would certainly be full of commercial aircraft.

So far, the only real efforts in aerial activity since the Armistice in this country have been devoted to the extraction from the pockets of the comfortably unemployed of excessive fees for conveying them in extreme discomfort to places they certainly have no reason to visit.

It is highly probable that even the apparent impossibility of this performance would scarcely have stimulated the activity which has actually been displayed had not a benevolent Government instituted a Department of Civil Aeronautics to make the process even more difficult.

This peculiarity of the British temperament shows up almost as clearly when one considers the future programme of certain of those firms who have during the late war taken up the work of aircraft manufacture.

The development of aircraft for serious transport work on a large scale presents quite a number of interesting problems—problems which involve the surmounting of numerous difficulties and the expenditure of much labour, material, and money upon experimental work.

Now, of the firms who have given any serious attention to aircraft, there are two main varieties. One is of the type of the large industrial corporation with immense resources and innumerable outlets for its operations who have taken up aircraft work as a wartime side-line. To this class the continuance of experimental work presents no real difficulty. They already own the necessary plant, tools, staff, and personnel to carry out such work, and they can well afford to invest the necessary cash in running their experimental work against the time when an ample return will arrive almost automatically.

The other main class consists of those few pioneers who spent their all in experimental work before the war, have been deprived—*via* the Excess Profits Duty—of any reasonable return during its continuance, and who, to all appearances, have no earthly chance of successfully bearing the burden of the next few years.

The first class, being British, have mostly decided that it is too easy, and are very generally shutting down their aircraft departments completely.

The second class—equally British—without exception appear determined to carry on.

Fortunately the immediate difficulties in their way seem to be sufficient to ensure a really fine display of energy on their part, and therefore there is no real fear for the future of the British Aircraft Industry.

AN AERONAUTICAL MOLESWORTH.

Handbook of Modern Aeronautics. By Arthur W. Judge, A.F.R.Ae.S. (The Library Press, Limited, London. Price 30s. net.)

Mr. A. W. Judge has already contributed a number of very useful compilations to the technical literature of aviation. In those books he has shown a capacity for collecting into an easily accessible form aeronautical data from all the ends of the earth.

In a "Handbook of Modern Aeronautics" Mr. Judge has collected a vast amount of information relating to aeronautical engineering into a kind of "Super-Molesworth" for the aeroplane designer, consisting of 1,040 pages, containing 350 tables and nearly as many illustrations.

The first two sections, totalling 110 pages, are devoted entirely to tables of weights and measures, conversion tables, logarithms, squares and square-roots, etc., screw threads, wire gauges, and like painful necessities of such a work.

Thereafter the book gets to rather closer grips with its subject and deals with the weights, the properties, and the treatment of materials used in aircraft manufacture, the theory of the strength of materials, and thence, with an interjected interlude dealing with mathematical rules and mechanics, to aerodynamics, the design of aeroplanes, the calculation of aeroplane performance, stability and control of aeroplanes, aeronautical instruments, meteorology, aerial navigation, aircraft engines, airscrews, with a final chapter on flying-boats and seaplanes.

The amount of information which it contains is enormous, and the greater part of the information is useful information. It must be regarded as a monument to Mr. Judge's industry in collecting and tabulating facts and to his judgment in choosing the facts to tabulate.

Upon the whole, however, it may be doubted whether Mr. Judge and his publishers have been well advised in issuing the volume at this date.

During the five years of war technical aeronautical information was necessarily kept secret, and most of the contributions to the art are not yet available for publication.

Hence Mr. Judge's immense labour has produced a tome which contains practically no aerodynamical statistics which had not been published before the outbreak of war. For instance, the latest N.P.L. wing section test recorded is that of R.A.F.6—a section for which no modern designer is ever likely to have any use.

In a similar way the method outlined for determining wing stresses in aeroplanes is that published by the R.A.F. circa 1913, and long since abandoned in favour of more accurate methods by practically all British designers.

The labour of compiling such a book and the time occupied in printing and in checking proofs makes it impossible to include information of very recent date, more particularly in a first edition, but in this case a delay of a few months or perhaps a year would have made a great difference.

One can entirely sympathise with Mr. Judge's desire to put the work on the market and establish his footing before anyone else compiled a similar volume, and one can quite appreciate the trial to his patience which would be involved in waiting for the Air Ministry to allow the publication of modern technical data; but the result is that in many respects the book is five years out of date—a rather serious matter in this case.

For the rest the book is well and clearly printed, and on the whole well arranged. A number of typographical errors have escaped the notice of the proof-readers—an almost inevitable occurrence in the first edition of such a work—but in the majority of cases the errors are obvious and are not liable to mislead any intelligent reader.

Altogether the book should prove extremely useful to all aeronautical engineers, and is well worth its price.

LIBERTY ENGINES.

The Liberty Engine and Foundry Company, Ltd., of Seymour, Connecticut, U.S.A., announce that they have completed their plans for the manufacture of Liberty engines for commercial purposes and that orders for early delivery of these engines can now be accepted by them.

A NEAT JOB.—The business end of the B.A.T. Sporting two-seater (170 h.p. "Wasp" A.B.C. engine).

Longest Commercial Flight in the World

LONDON TO MADRID NON-STOP—

900 MILES IN $7\frac{3}{4}$ HOURS

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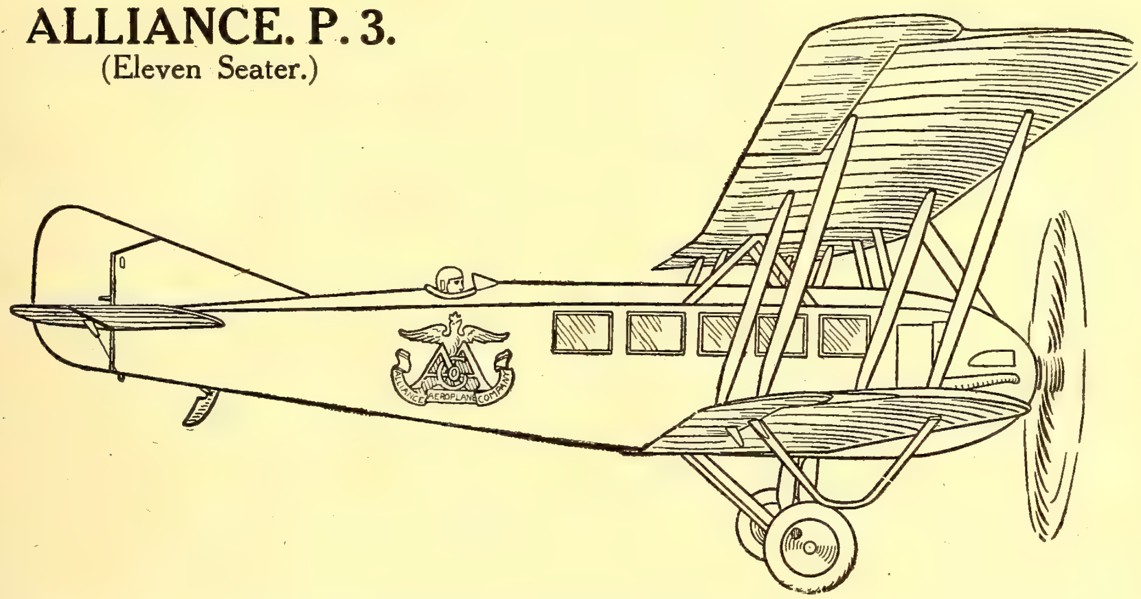

THE above is a sister machine to the one which flew to Madrid. These machines have been adopted by Messrs. Waring & Gillow for their Intercommunication Services between their various Houses in London, Paris, Brussels, Madrid, Buenos Aires, etc. The first flight between London and Madrid was made on July 31st:—a distance of 900 miles in $7\frac{3}{4}$ hours. It is to be noted that the actual fuel cost on this flight was $7\frac{1}{4}$d. a mile.

On a service of this length these machines are capable of carrying a TON of goods or mails or TEN passengers, in addition to the pilot and fuel for the non-stop flight. The passengers are very comfortably seated in a totally enclosed cabin, free from noise and draughts and provided with ample window area, affording a clear view of the country below.

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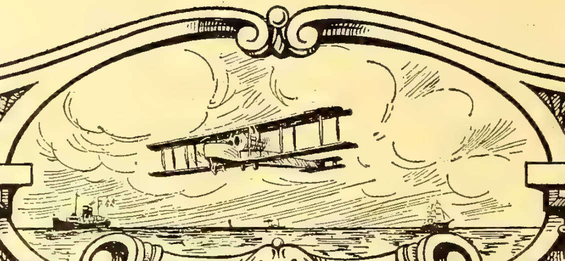

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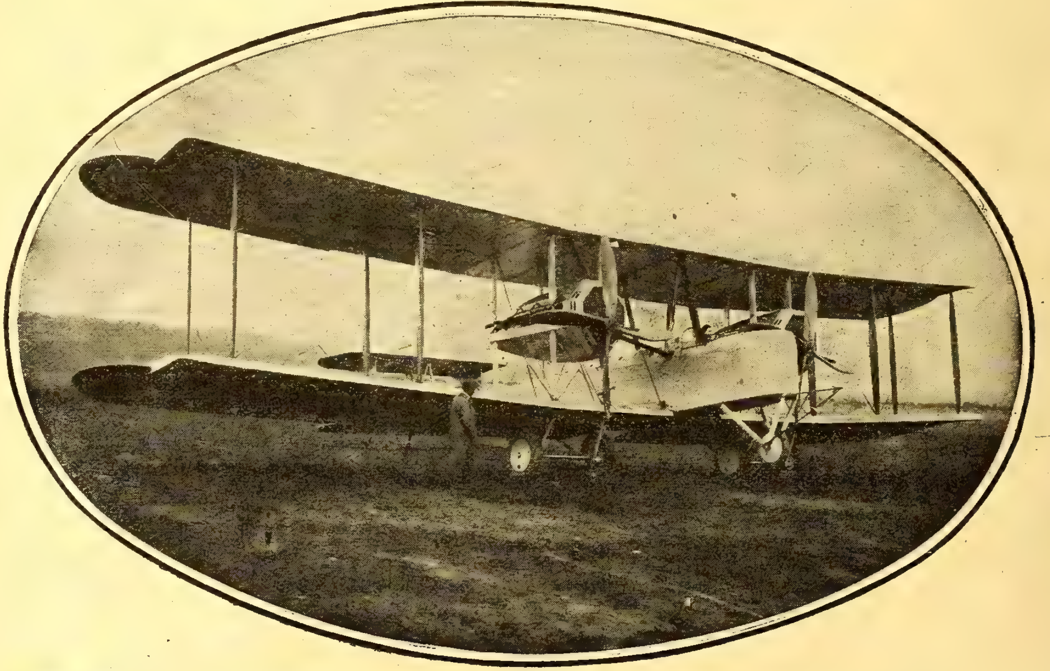

The first direct Flight from Newfoundland to Ireland (1,900 miles) was accomplished by this Aeroplane in 15 hrs. 57 mins. 4 tons of Petrol and Oil were used.

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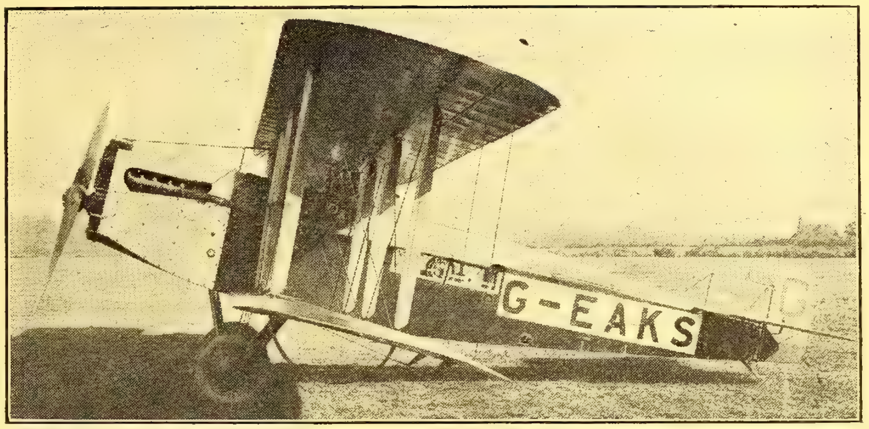
Telephone
Kensington 6520 (4 lines).

THE SOPWITH "WALLABY."

The Sopwith "Wallaby" has been designed primarily to attempt the Australian flight and is a two-seater single-engined tractor biplane. In general lay-out it resembles the Sopwith "Atlantic" machine, but it embodies many improvements and modifications, which suggested themselves as a result of the first attempt at direct flight across the Atlantic.

The fuselage is constructed in the ordinary way and carries in its nose a 375 h.p. Rolls-Royce "Eagle" Mark VIII engine. The main petrol tanks are carried in rear of the engine and extend aft to a point directly under the trailing edges of the main planes. A gravity petrol tank and water tank are carried in the centre section. The gravity tank is fitted with a flow-meter, which indicates the consumption of petrol per hour.



Side View of the Sopwith "Wallaby" (378 h.p. Rolls-Royce engine).

The pilot's and navigator's cockpit is fitted with Triplex side windows and a floor window in front of the pilot, who sits in front. Normally, the seats allow the crew to sit in the usual position with their heads just clear of the cockpit, but provision is made by means of which the cockpit may be converted into an enclosed cabin.

The seats are fitted with clips which allow them both to drop about a foot, and sliding doors are pulled across the openings. Four of the side windows are made to open, and a pipe running from the front of the radiator supplies fresh air to the crew.

Dual control is fitted throughout, and the pilot has two rudder-bars, one above the other, for the two seat positions. A tail-plane operating gear is fitted, the control wheel being situated on the left side in a position which is convenient to both pilot and navigator. The cockpit arrangements have been beautifully worked out and are fitted with every convenience for the crew.

The pilot has a system of pull-out tables for charts, etc., together with slots and receptacles to take parallel rulers and instruments. The circular opening for the pilot's head is fitted with an aluminium beading which is graduated off into degrees for use in conjunction with a sextant. In rear of the navigator are cupboards and lockers for carrying foodstuffs and any other odds and ends necessary for the journey.

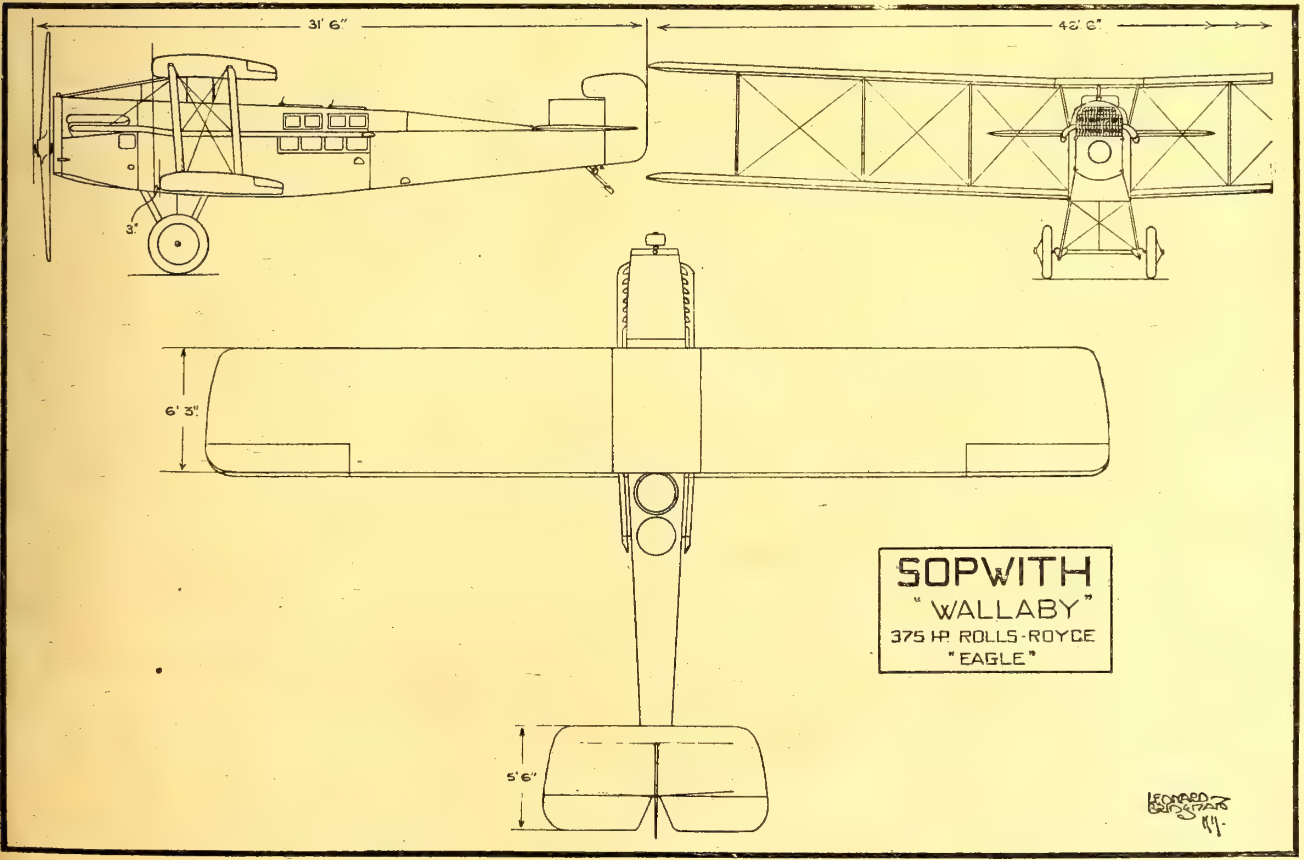
The fuselage fairing tapers down to the small rectangular fin carried above the tail-plane to which is hinged a balanced rudder.

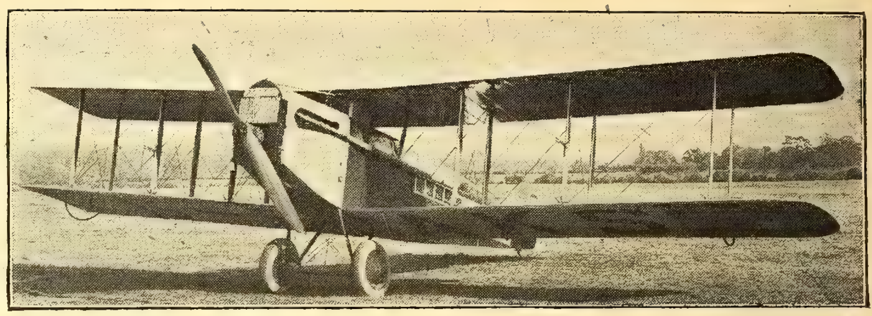
The main planes of 46 ft. 6 in. span are staggered forward three inches and have three sets of struts on either side of the fuselage. Unbalanced ailerons are fitted to all four planes.

The undercarriage is an ordinary steel-tube Vee-type affair and carries two large size Palmer Aero wheels suspended in the usual Sopwith manner, that is, on a divided axle which is hinged in the centre to the cross-tubes at the apices of the Vees, and slung on shock absorbers in the usual manner.

The whole machine is a very clean job and is finished off in the typical Sopwith style, which strikes one not only as being thorough, but carefully thought out and well finished.

The machine handles very well in the air, and the fact that it has a ratio of useful load to total weight of 46.5 per cent. shows that it possesses the efficiency that one might connect with the names "Sopwith—Rolls-Royce."





Three-quarter Front View of the Sopwith "Wallaby."

SPECIFICATION.

Type of machine	Single-engined tractor biplane
Name	Sopwith "Wallaby"
Purpose for which intended	Australian flight, passenger carrying, etc.
Span	46 ft. 6 in.
Length	31 ft. 6 in.
Chord	6 ft. 3 in.
Gap	6 ft.
Total surface	550 sq. ft.
Span of tail	11 ft. 6 in.
Chord of tail	5 ft. 5 in.
Engine type and h.p.	Rolls-Royce "Eagle" Mark VIII 375-h.p.
Weight (empty)	2,780 lb.
Weight (fully loaded)	5,200 lb.
Useful load	2,420 lb.
Ratio of useful load to total weight	46.5 per cent.
Load per sq. ft. (fully loaded)	9.45 lb.
Load per sq. ft. (light)	5.05 lb.
Load per h.p. (fully loaded)	14.5 lb.
Load per h.p. (light)	7.75 lb.
Speed (maximum)	121 m.p.h.
Speed (slow)	48 m.p.h.
Speed (cruising at 5,000 ft. at 15 gal. per hr.)	107 m.p.h.
Flight range	1,500 miles
As passenger carrier :— 8 people at cruising speed (107 m.p.h.)	500 miles

THE INSTITUTE OF AERONAUTICAL ENGINEERS.

The following is a copy of a letter addressed to a member of the Council of the Royal Aeronautical Society by Professor G. H. Bryan, F.R.S., in reply, apparently, to an objection to the formation of the Institute of Aeronautical Engineers :—

North Wales, Oct. 8th, 1919.

My dear Sir,—I have to thank you for yours of the 6th inst., and while regretting that such is the case, I can only say that I fully anticipated opposition on the part of the Royal Aeronautical Society towards the proposed Institution of Aeronautical Engineers.

My reason for wishing to take this movement up is that I find that a duplication of societies exists in nearly every other branch of science, even where the subject-matter is far more limited in scope than it is in aeronautics, and I feel the time has come for extending the practice to the interests of aerial navigation.

We have a Chemical Society and an Institute of Chemistry, a London Mathematical Society and a Mathematical Association, and I could draw up a long list of other cases in none of which does any clashing of interests exist. In the mathematical case the "Association" is entirely devoted to the interests of teachers in schools, most of whom would never think of joining the London Society, although many of the leading men in that subject belong to both bodies. But I have been partly guided in my decision by the recent proposal to found an Institute of Physics, although I should have considered this to be the case in which duplication was least necessary and the requirement adequately met by the London Physical Society.

The present requirements of aerial navigation cover a far wider field of activity, both theoretical and practical, than falls within the scope of any of these other "societies" and "institutions," and I do not consider that it is any longer possible for a single body to attempt to cope with all these varied interests without weakening itself by attempting too much.

Personally I consider that the foundation of such an institution devoted mainly to the interests of mechanics and pilots, and holding examinations similar to those of the Institute of Chemistry, is calculated to strengthen instead of weaken the position of the Royal Aeronautical Society as the paramount authority on scientific and technical matters connected with aviation. The circumstance that the parent society has so recently acquired the title "Royal" seems a fitting opportunity for the change.

I think you will see from this that I have acted entirely on my own responsibility in taking up the I.Ae.E., and have not been influenced in any way by personal considerations. I am not concerned with the motives which Captain Shaw had in starting the Institute, but I consider it to be a move in the right direction which is bound to meet with some opposition at first, but which will find its proper level after a short time.

It is partly for this reason, and partly because for the next year I have an opportunity of interesting myself in aeronautical matters such as I have not previously enjoyed, and which may not continue, that I accepted Captain Shaw's nomination to an office which will bring me into close touch with the whole working of the movement.

I am sorry you wrote so quickly, for I was just on the point of writing in this spirit to the Royal Aeronautical Society when yours arrived, and I should have been better pleased ~~had I been first in the field in approaching its Council.~~

In conclusion I can only repeat that I have given the matter very careful consideration before taking this step. If it involves any risks they are mere trifles in comparison with the risks that have been incurred in building up modern aviation.

Whether you are right in thinking this Institute wholly unnecessary or I am right in thinking that it will ultimately prove a valuable auxiliary to the Royal Aeronautical Society, time will show. But it has been my experience that where my opinions differed from those of other people they have ultimately, though not immediately, proved to be right.

I am keeping a copy of this letter which I wish to make use of for circulation, and I shall be exceedingly grateful if you will submit it to the Council of the Royal Aeronautical Society and make any further use of it in showing it to friends that you think fit.

With kind regards, yours sincerely,

(Signed) G. H. BRYAN.

[It will be remembered that Professor Bryan is the leading authority upon the mathematics of aeroplane stability in this country.

Professor Bryan was invited to become the first President of the Institute of Aeronautical Engineers and he has accepted that invitation.—Ed.]

THE GOVERNMENT AEROPLANE COMPETITION.

Apropos the ridiculous rules for the Government competition for commercial aeroplanes, it has been computed by an authority with a wide acquaintance with practical aeroplane testing that a scoring sheet about 48 in. by 60 in. will be required to record the marks for each machine entered, and that at least two months will be required to test each machine.

BRITISH AVIETTES.

Apropos the revival of interest in man-propelled aeroplanes, it is of interest to hear that certain well-known and experienced British aeronautical engineers are concerning themselves with the subject.

Particular interest attaches to certain experiments with a machine of the flapping-wing type, which, although it has not yet flown, has given very promising results which show that the flapping wing is by no means a despicable propulsive agent.

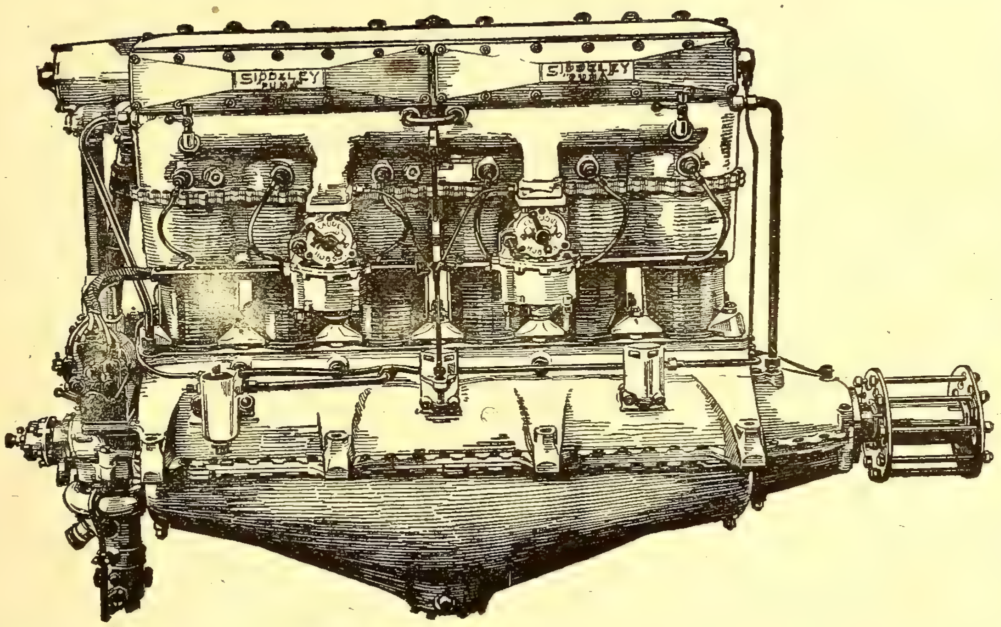
BARIMAR, LTD., AT OLYMPIA.

The stand of Barimar, Ltd., scientific welding engineers, at the Olympia Motor Show affords conspicuous evidence of the enterprise of this company in the field of metal fusion.

Immense progress has been made within the last five years, and, indeed, there has been such a perfecting of the processes that what was impossible years ago is now a matter of everyday occurrence.

Barimar is this year showing machinery which is now being pressed into use by the firm in connection with the efficient handling of repair work. In this, Barimar is believed to be the only firm in the universe that has so far taken advantage of the new apparatus, by means of which scientists are bringing to the aid of man unerring instruments calculated to be of the greatest possible use.

Barimar will show some excellent samples of welded metals of every description. In addition, there will be numerous photographs of repair jobs put in hand for customers in all parts of the kingdom, and an adequate display of new radiators and general sheet-metal work, together with Barimar steel domed mudguards and accessories, and cast aluminium number-plates. They will also show examples of ~~Barimar machine work, such as crankshafts, valves, pistons,~~ and other replacement parts.



The SIDDELEY AIRCRAFT ENGINE

The Folkestone to Cologne Air Mail

THE Aerial Mail Service from Folkestone to Cologne (recently discontinued) was carried out by two squadrons of the Royal Air Force, one of which was equipped with D.H.9 aeroplanes fitted with 230 h.p. Siddeley Aircraft Engines. The journey was performed in an average of 3 hours 22 minutes. The average weight of mail carried per journey was over 160 pounds.

That the service was efficient is proved by the fact that during the week ended August 16th over 7,000 pounds of postal matter was safely carried from this country to the troops in Germany. Of 45 journeys commenced only one was not completed.

Write for Brochure "Three Announcements."

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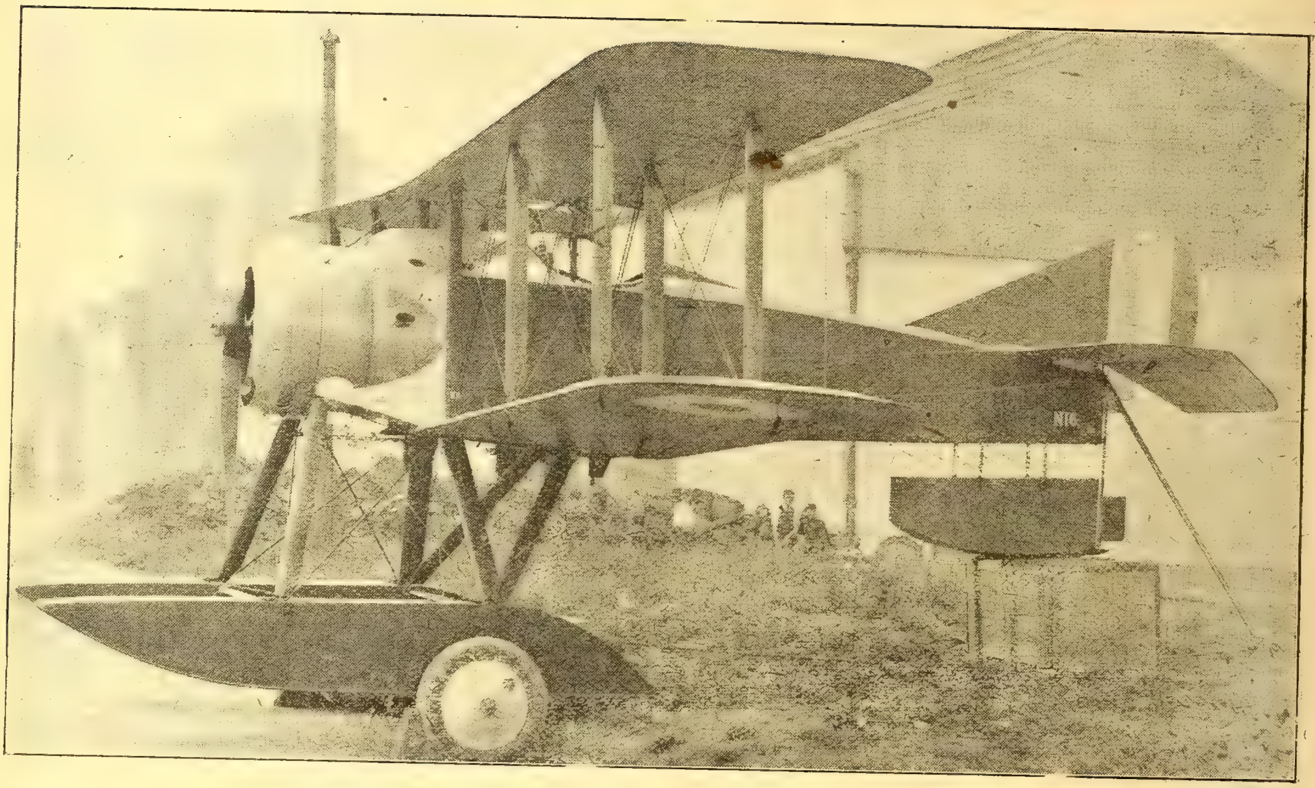
MODERN BRITISH AEROPLANES.

XX.—The Westland Aircraft Works.



The Westland Folding Seaplane N.16 (150 h.p. B.R.1. Engine).

The Westland Aircraft Works is the aircraft branch of Petters, Ltd., the famous engineering firm of Yeovil, Somerset, and is under the management of Mr. R. A. Bruce, M.I.M.E., A.M.I.C.E., M.Sc., formerly of the British and Colonial Aeroplane Co., Ltd., and previously connected with the Brennan torpedo and the Brennan Gyroscopic Monorail.

During the period of hostilities the firm built numerous machines to the specifications of the Air Department, Admiralty, and the Air Ministry, and have in addition produced several interesting machines of their own design.

THE WESTLAND SEAPLANE N.16.

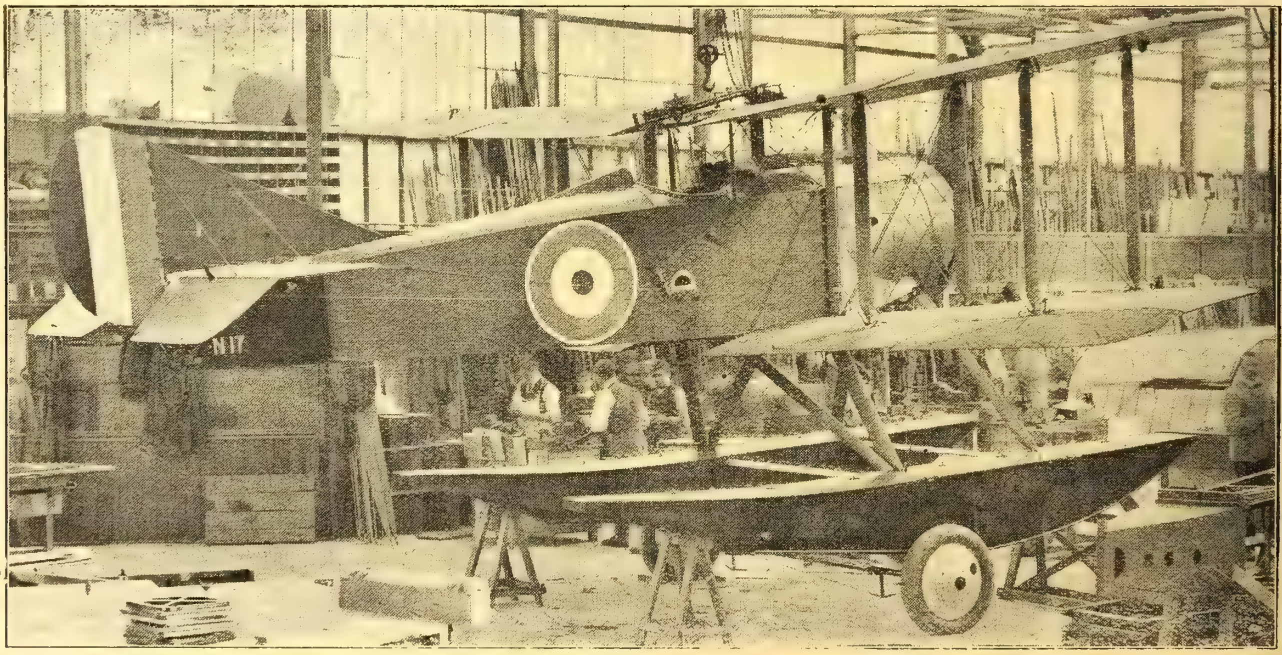
The Westland seaplane N16 is a small single-seater seaplane fitted with two pontoon floats and a large single tail float, and was designed as a fighter and light bomber for use from seaplane carrier ships.

The fuselage is of normal type, with a pronounced bump in the fairway ahead of the pilot's seat. In this bump is fitted a fixed synchronised Vickers gun.

In order to reduce the space for stowage on board ship, the main planes are made to fold. Both upper and lower planes are of equal span, and two sets of interplane struts are fitted on each side.

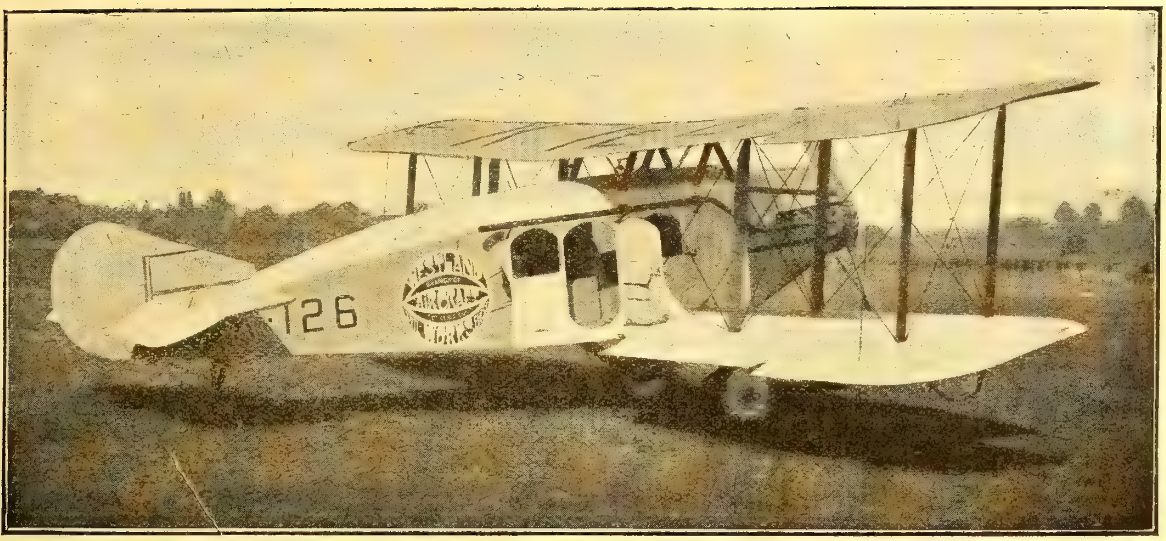
The wings are fitted with trailing edge flaps along the whole span, giving a variable camber, which is controlled from the pilot's seat.

Ailerons are fitted to both upper and lower wings.



The Westland Seaplane N.17. Note the curious form of main float and the absence of a tail float. Otherwise this machine is identical with N.16.

WESTLAND



The Westland "LIMOUSINE"

with the "Rolls-Royce" engine. This is not a converted war machine, but has been designed and built for high-class public passenger service or for the convenience of the private owner.

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Load—*With 600 miles range of fuel—2,000 lbs.*

Fuel Cost at full load—*7·2 pence per mile.*

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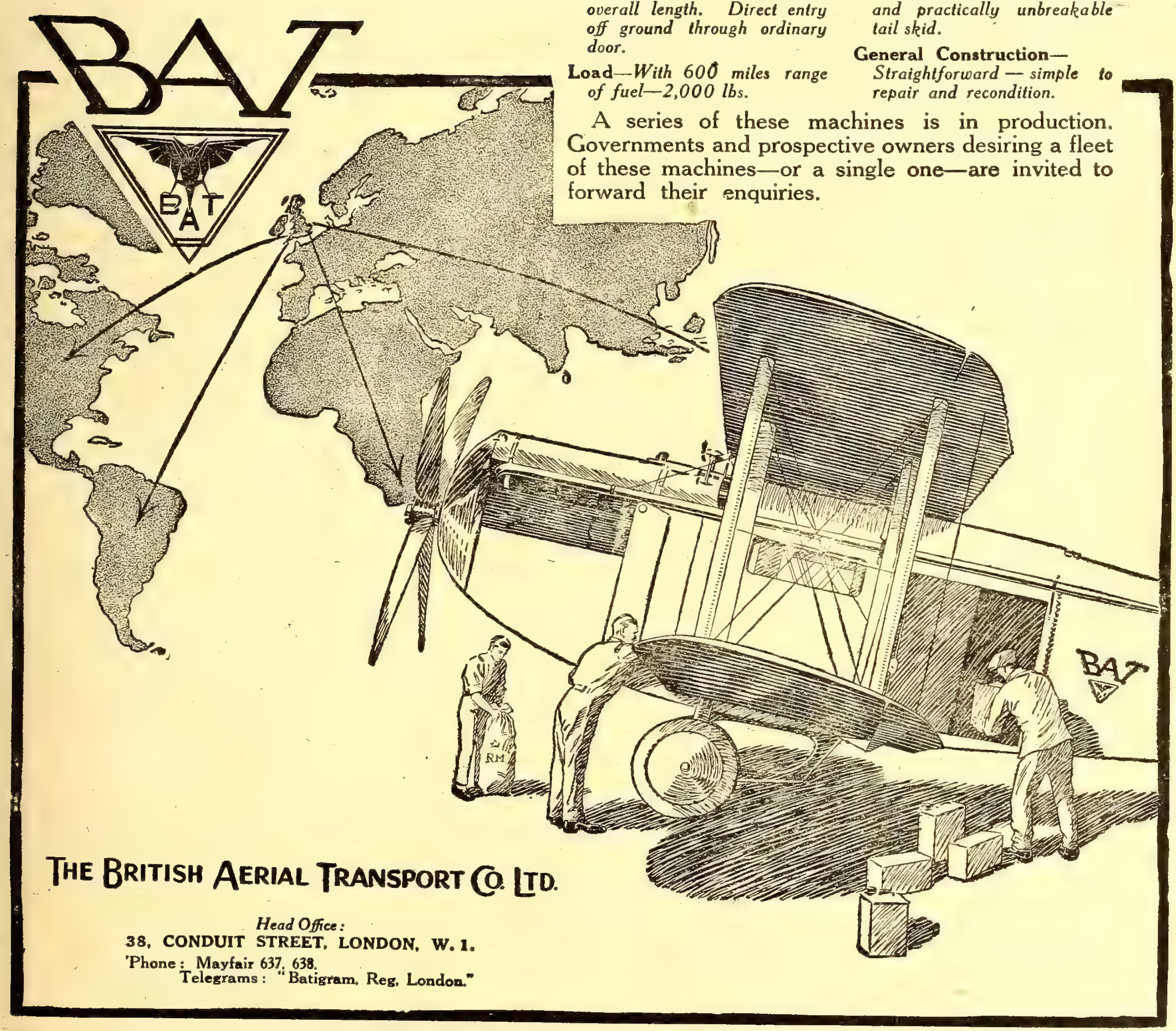

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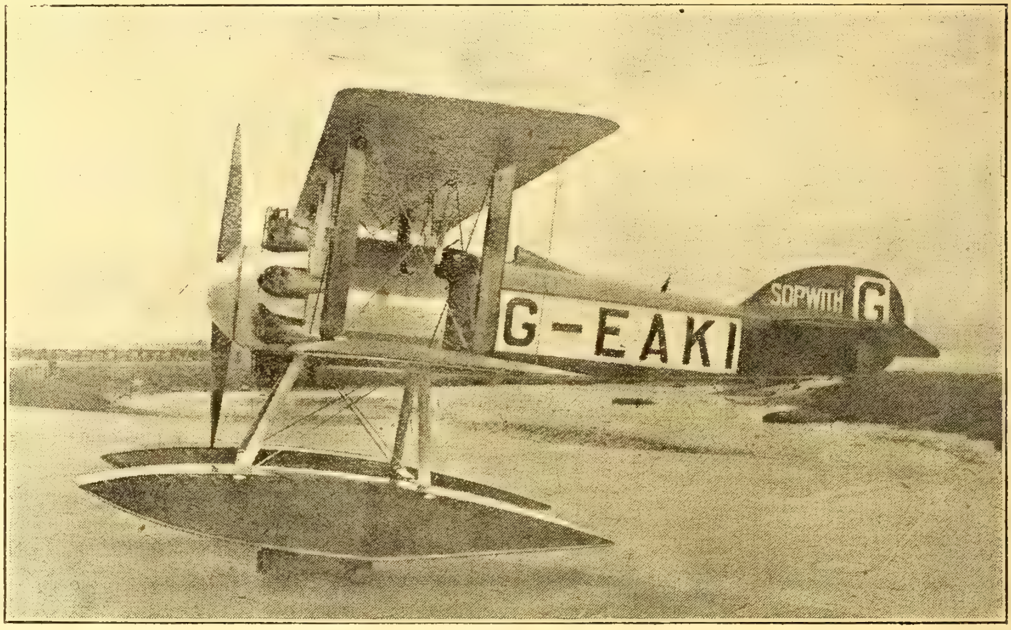

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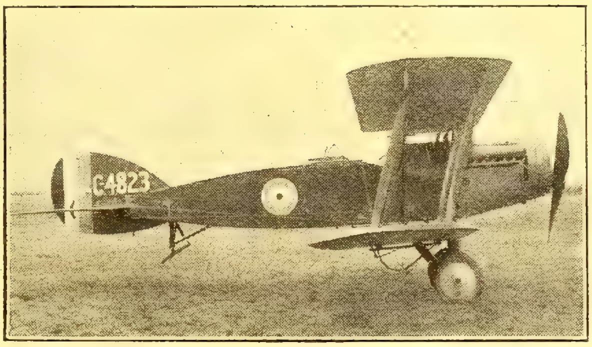

In September, 1917, a Bristol Fighter was delivered from the "Bristol" works and put into commission in the fighting area. It was unfortunately landed in Holland and soon afterwards was acquired by the Dutch Government. From that time until now, though in continuous use by the Dutch Pilots, the **"CELLON DOPE"** has never been renewed and is still in perfect condition. The machine has never been repaired or renovated in any way, every unit being exactly as when it left the "BRISTOL" works.

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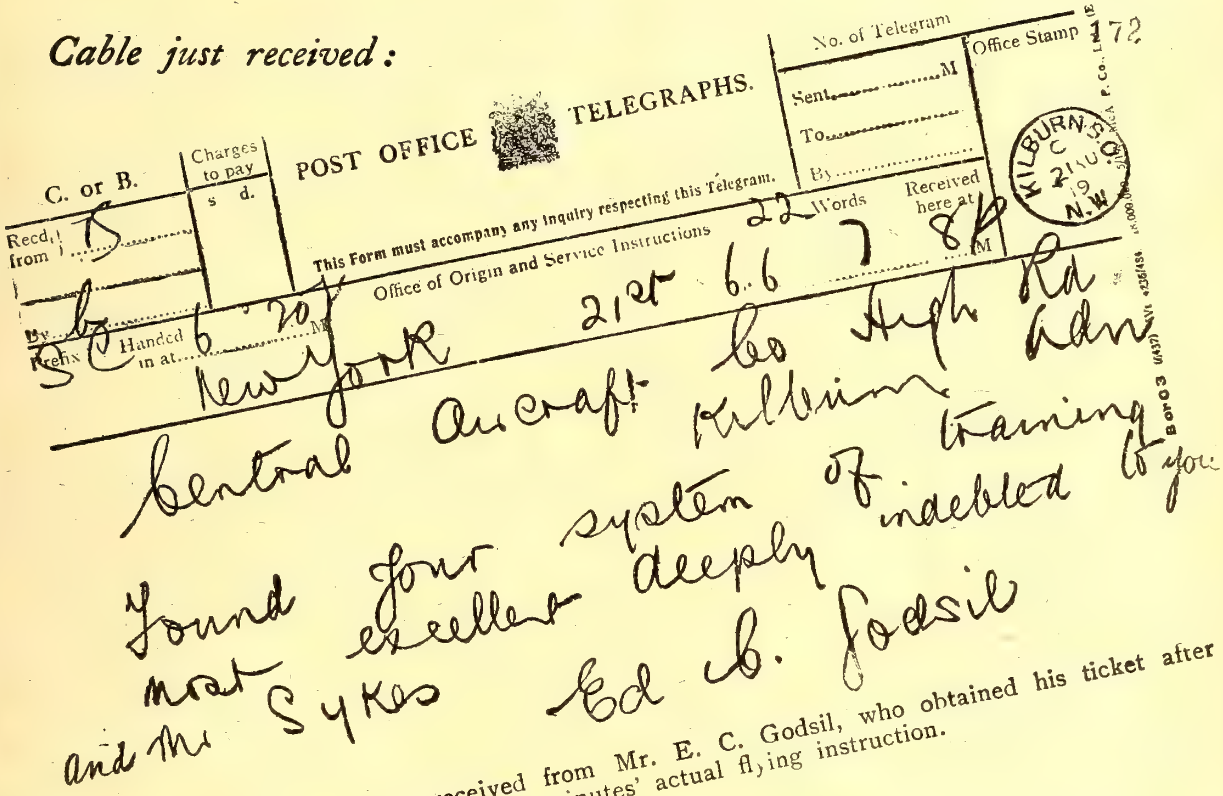

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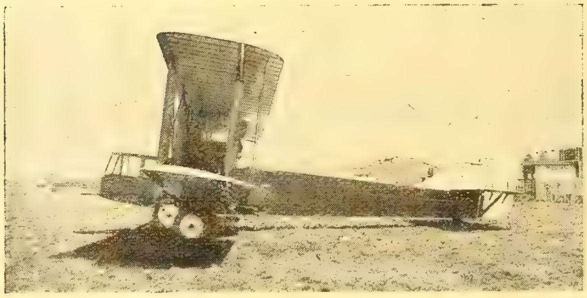

This machine, which can be seen in flight at Hendon, has been designed specially for pleasure and commerce. It is not an adapted war machine. Fitted with two 320 h.p. Rolls-Royce engines. It has a maximum speed of 115 m.p.h., and a flight radius of 4 hours. The limousine, luxuriously upholstered, and containing an electrically heated carpet, carries 4 to 6 passengers. The pilot, with whom communication is maintained by speaking tube, sits in a separate compartment above and at the rear of the passengers' quarters.

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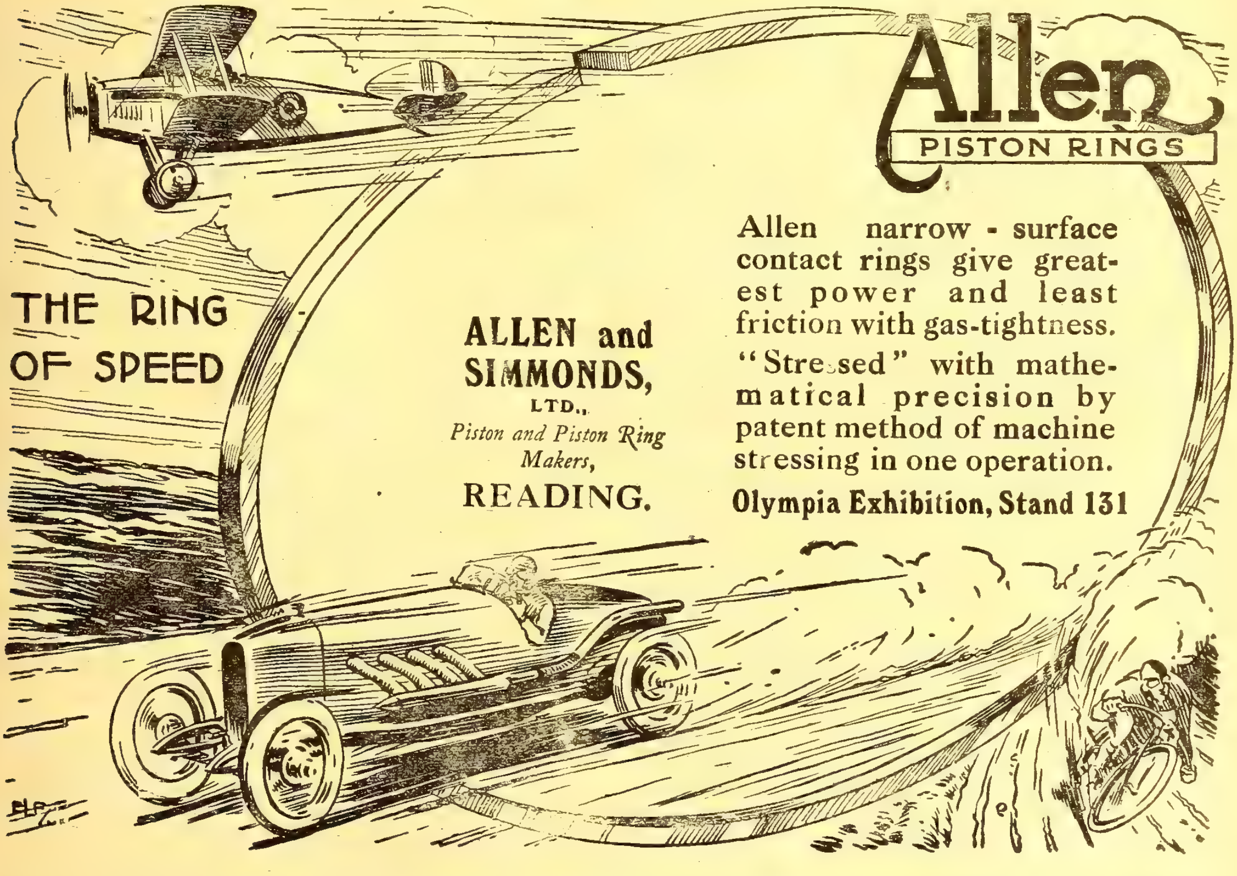

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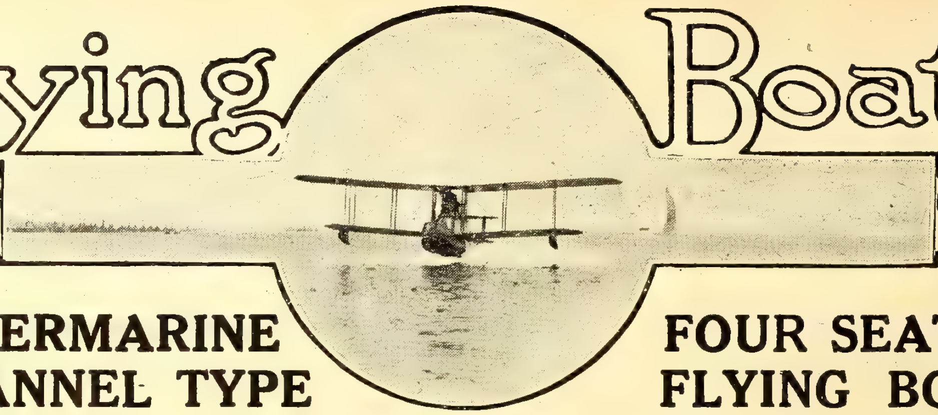

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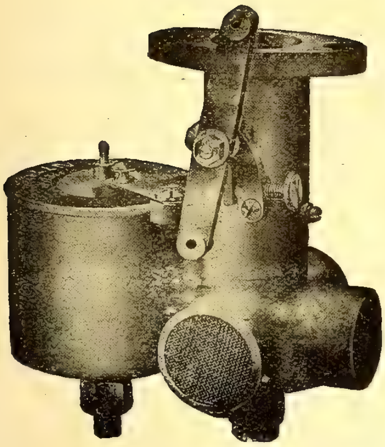

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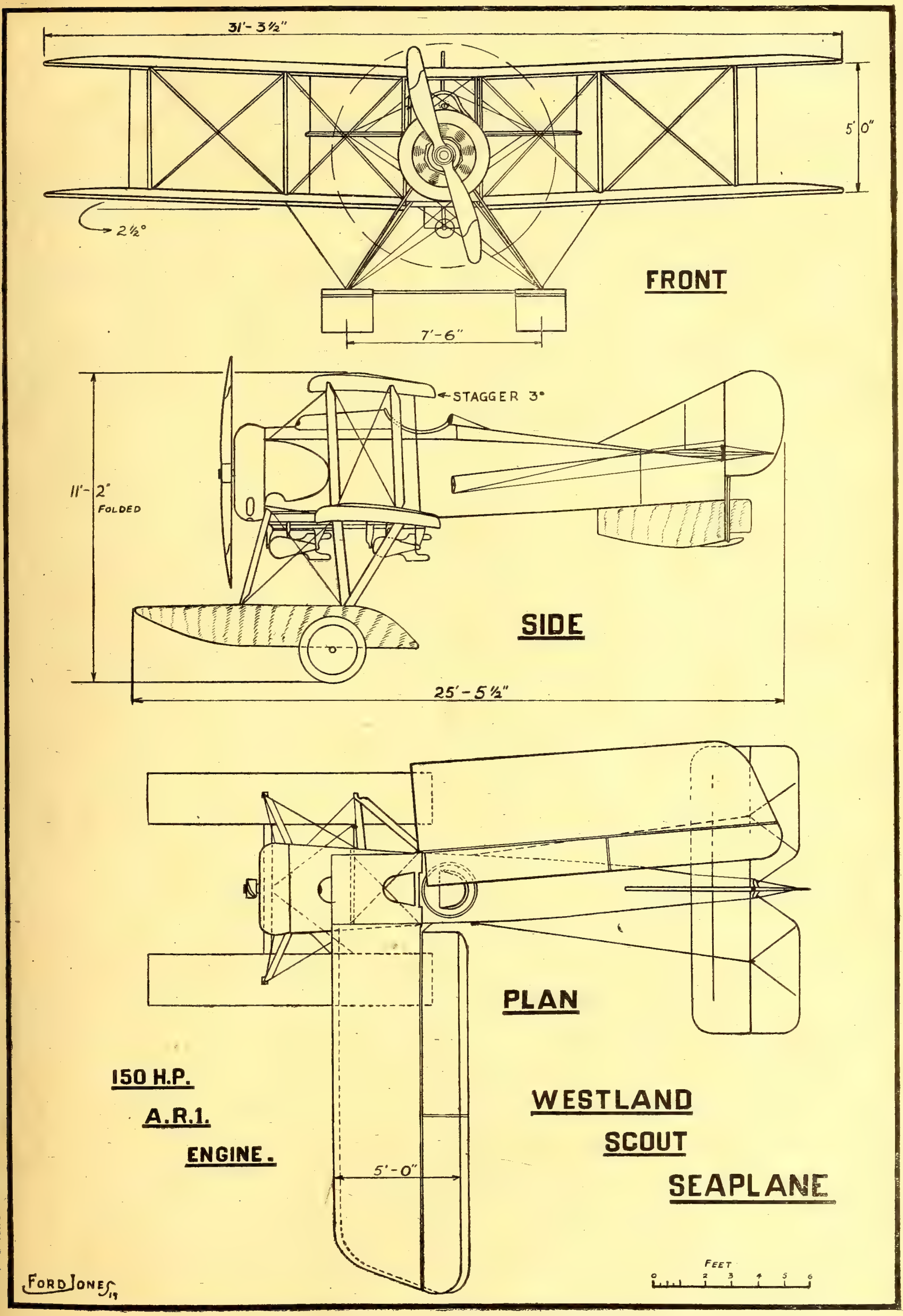
31'-3½"
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2½°
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7'-6"
STAGGER 3°
11'-2"
FOLDED
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25'-5½"
PLAN
5'-0"
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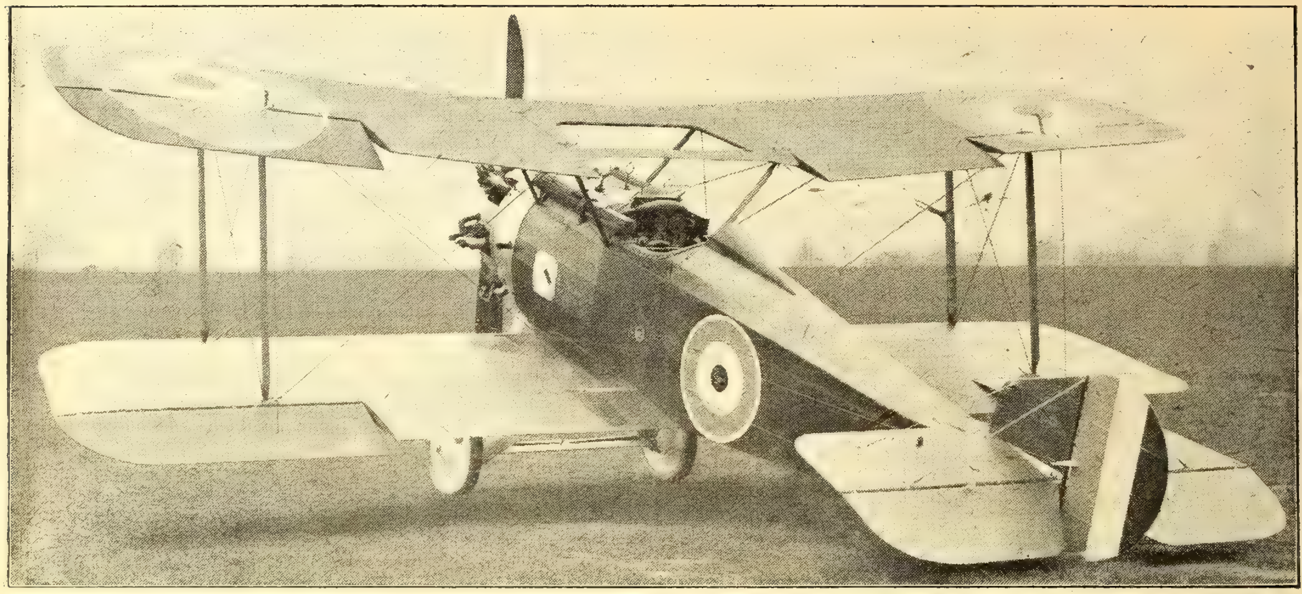


Three-quarter rear View of the Westland "Wagtail" (170 h.p. "Wasp" A.B.C engine).

The Westland N17 seaplane is exactly the same except that the main floats are increased in length, slightly turned up at the rear, and no tail float is fitted.

Specification.

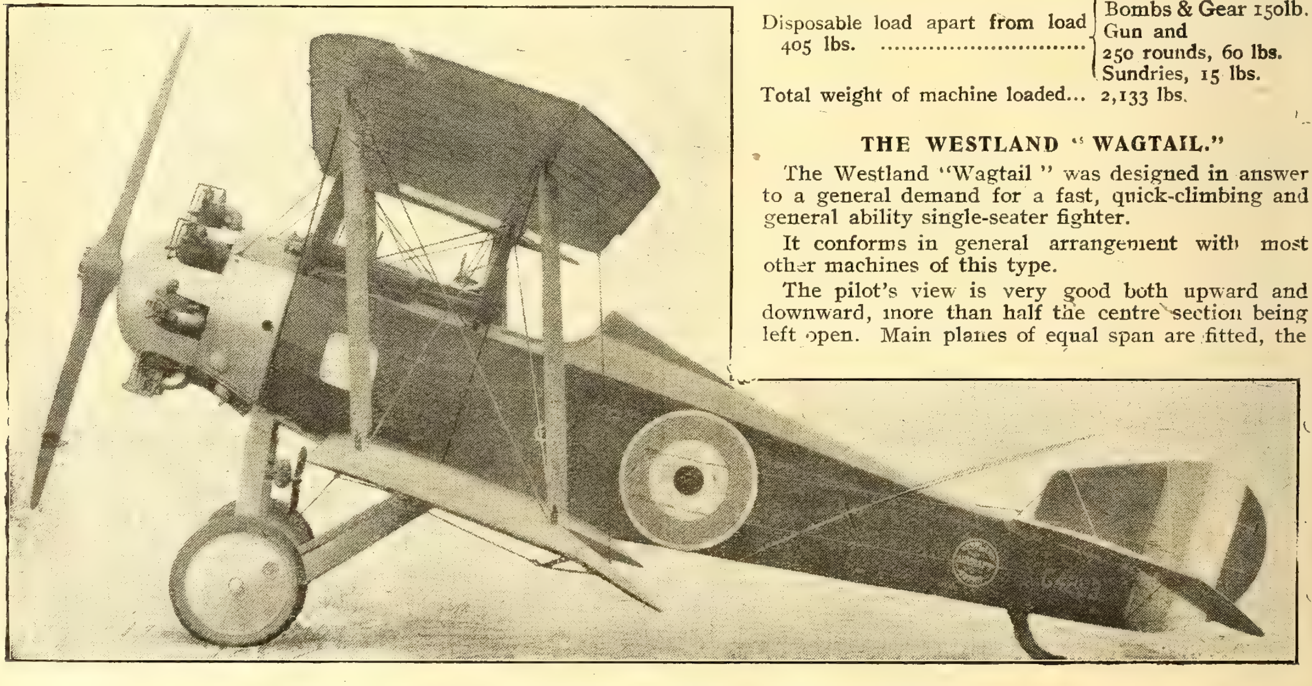
Type of machine	Single-seater Tractor Seaplane Scout.
Name of type of machine	Westland Seaplane N. 16.
Purpose for which intended	Fighter Scout, capable of getting off deck of ships.
Span	31 ft. 3½ in.
Overall length, fuselage horizontal	25 ft. 3½ in.
Overall length resting on tail float	25 ft. 5½ in.
Maximum height resting on tail float	11 ft. 2 in.
Chord	5 ft.
Total surface of wings, includes centre sections	278 sq. ft.
Span of tail	11 ft.
Area of tail plane	24.5 sq. ft.
Total area of tail, incldg. elevator	42 sq. ft.
Area of elevators	17.5 sq. ft.
Area of rudder	7.5 sq. ft.
Area of fin	6.8 sq. ft.
Area of each outer aileron	9.9 sq. ft.
Total area of ailerons	39.6 sq. ft.
Maximum cross section of body	10¾ sq. ft.
Horizontal area of body	44 sq. ft.
Vertical area of body	55 sq. ft.
Engine type and h.p.	Air-cooled rotary A.R. 1; 150 b.h.p.; 1,240 r.p.m.
Airscrew, diam., pitch and revs.	Diam. 2,650 mm., pitch 2,650 mm., 1,240 r.p.m.
Wing section	R.A.F. 14. Variable camber device.
Weight of machine empty, without fuel and oil	1,460 lb.
Weight of machine empty, but with 268 lbs. for fuel and oil	1,728 lb.
Load per sq. ft.	7.7 lb. sq. ft. fully loaded.
Weight per h.p.	14.2 lb.
Tank capacity in hours	2½—3 approx. ground level.
Tank capacity in gallons	Petrol 30 galls.; oil 5 galls.
Performance—	
Speed low down	108 m.p.h.
Landing speed	50 m.p.h. with no flaps; 45 m.p.h. with flaps.
Climb—	
To 5,000 feet	10 minutes.
To 10,000 feet	28 minutes.
Disposable load apart from load 405 lbs.	Pilot 180 lbs. Bombs & Gear 150lb. Gun and 250 rounds, 60 lbs. Sundries, 15 lbs.
Total weight of machine loaded	2,133 lbs.

THE WESTLAND "WAGTAIL."

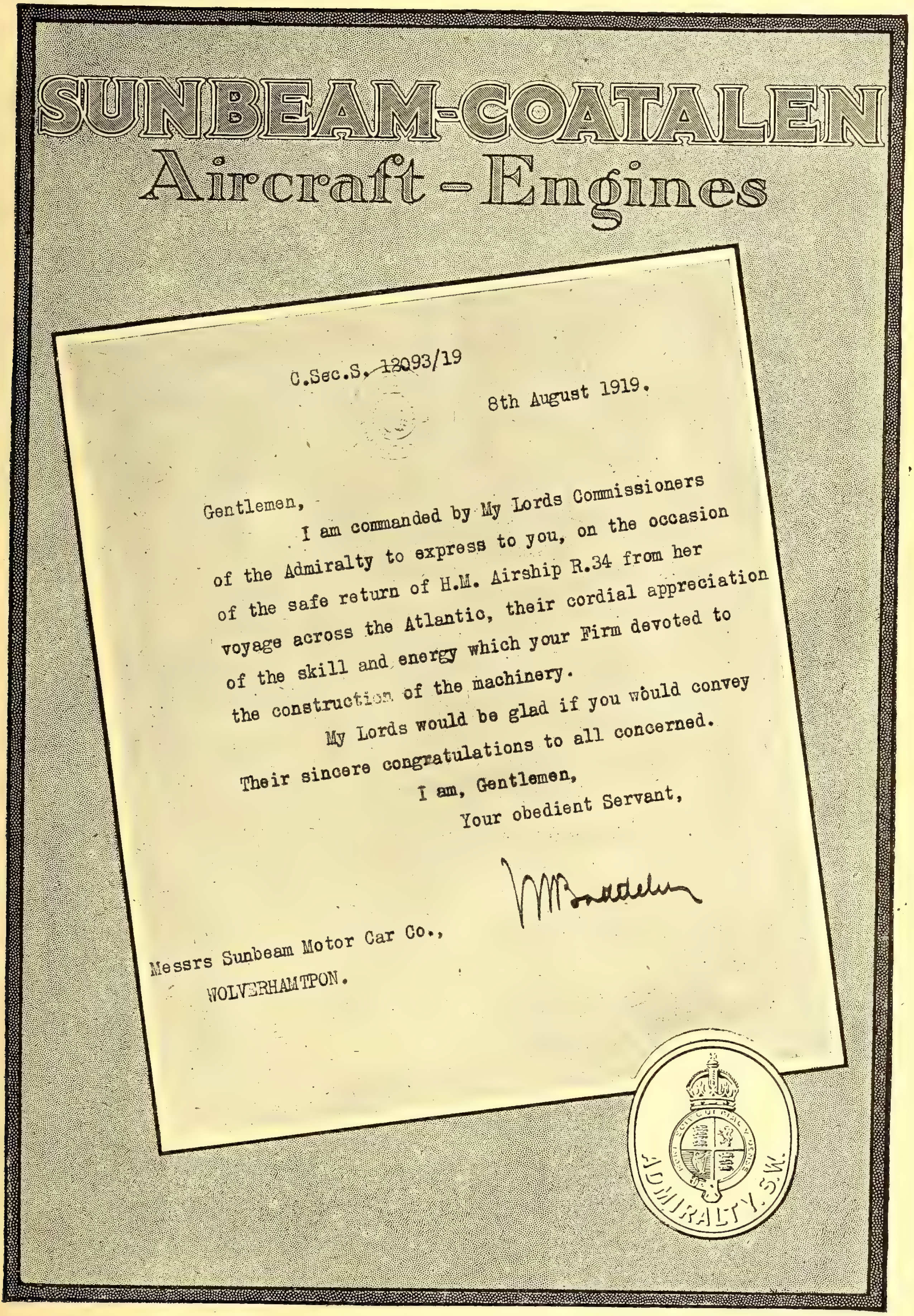
The Westland "Wagtail" was designed in answer to a general demand for a fast, quick-climbing and general ability single-seater fighter.

It conforms in general arrangement with most other machines of this type.

The pilot's view is very good both upward and downward, more than half the centre section being left open. Main planes of equal span are fitted, the



Side View of the Westland "Wagtail" Single-seat Fighter.



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I am commanded by My Lords Commissioners of the Admiralty to express to you, on the occasion of the safe return of H.M. Airship R.34 from her voyage across the Atlantic, their cordial appreciation of the skill and energy which your Firm devoted to the construction of the machinery.

My Lords would be glad if you would convey Their sincere congratulations to all concerned.

I am, Gentlemen,
Your obedient Servant,

Messrs Sunbeam Motor Car Co.,
WOLVERHAMTPON.

upper plane having a dihedral of 5 degrees, whereas the lower plane is flat, i.e., no dehedral.

Specification.

Type of machine	Single-seater Tractor Scout Aeroplane.
Name and type No. of machine...	Westland "Wagtail."
Purpose for which intended	High altitude fighting.
Span	23 ft. 2 in.
Gap	At outer strut 4 ft. 6 in. max Centre section 4 ft. min.
Overall length	18 ft. 11 in.
Maximum height	8 ft.
Chord	4 ft. 6 in.
Total surface of wings	190 sq. ft.
Span of tail	7 ft. 10¾ in.
Total area of tail, inclg. elevators	25 sq. ft.
Area of elevators	9.5 sq. ft.
Area of rudder	4.4 sq. ft.
Area of fin	2.1 sq. ft.
Area of each aileron	6 sq. ft.
Total area of ailerons	24 sq. ft.
Maximum cross section of body...	7.1 sq. ft.
Horizontal area of body	29.3 sq. ft.
Vertical area of body	36.5 sq. ft.
Engine type and h.p.	173 b.h.p. "Wasp" Fixed Radial.
Airscrew, diam., pitch and revs.	Pitch 2070 mm., dia. 2590 mm., revs. 1,900.
Weight of machine empty	965 lbs. (including 219 lbs for fuel and oil).
Weight of machine empty (without fuel and oil)	746 lbs.
Load per sq. ft.	7 lbs.
Weight per h.p.	7.7 lbs.
Tank capacity in hours	2½ hours at 15,000 ft.
Tank capacity in gallons	Petrol 26 galls.; oil 3 galls.
Performance—	
Speed at 10,000 feet	125 m.p.h.
Landing speed	50 m.p.h.
Climb—	
To 5,000 feet	3½ minutes.
To 10,000 feet	7½ minutes.
To 17,000 feet	17 minutes.
Disposable load apart from fuel... 365 lbs.	Pilot 180 lbs. Two guns, gear and 1,000 rounds 160lbs. Oxygen 25 lbs.
Total weight of machine loaded...	1,330 lbs.

The Westland "Limousine" (Rolls-Royce "Falcon") in the Air.

In addition to the machine described above the Westland Aircraft Works have designed and built the Westland "Weasel," a high-performance single-seater on somewhat similar lines to the "Wagtail," but fitted with the 320-h.p. "Dragonfly" A.B.C. engine, and the Westland "Limousine" four-seater commercial machine.

The "Weasel" is still undergoing tests by the Royal Air Force, and no details of the machine are as yet available.

The "Limousine" was fully described in The Aeroplane of August 13th last.

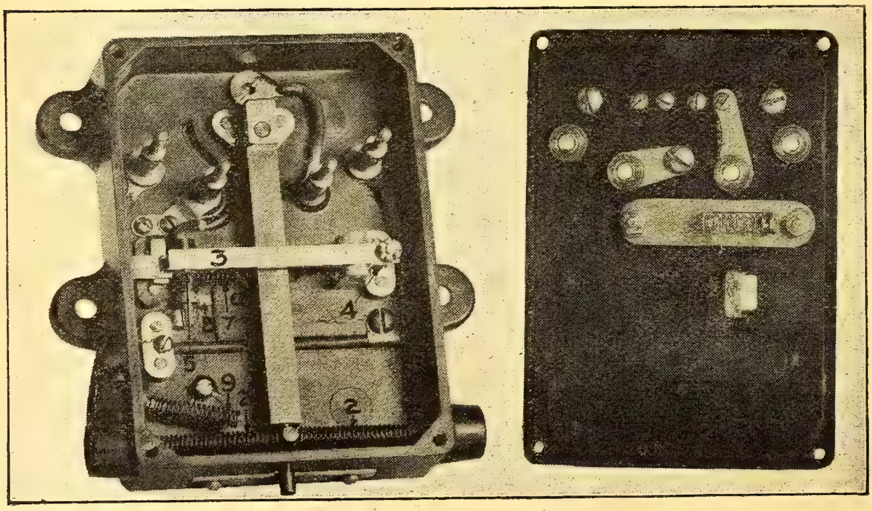
AN AMERICAN SAFETY DEVICE.

The result of an airscrew breaking either in flight, getting off, or landing is usually in itself unimportant. The indirect effect of the engine to which it is attached racing with the badly out of balance fragments of the damaged airscrew attached may range from a wrecked engine to a complete crash followed by fire.

Effectively to prevent damage from such an event it is necessary to cut off the engine-power before the engine actually races, which means that the engine must be stopped almost immediately. Switching off the engine by hand is rarely a sufficiently rapid process, as there is a definite time lag between the actual breakage, the pilot's recognition of the cause or seat of the trouble, and the physical action of switching off, and in this interval very considerable damage may occur.

The Douglas Interrupter, devised by Mr. Theodore Douglas, of the Duplex Engine Governor of Brooklyn, N.Y., was developed, under the auspices of the United States Advisory Committee for Aeronautics, to provide against accidents of this kind by automatically cutting off the ignition of an engine immediately on the production of any abnormal vibration occurring.

The design of the instrument is extremely simple, and it may be briefly described as consisting of a suitably pivoted metal bar, so mounted as to swing in a plane transverse to the axis of rotation of the propeller. By means of tension springs 2—2 the free movement of this bar is confined, under normal conditions, to a very limited arc in its plane of movement. The amplitude of this movement is determined by the weight of the bar, the intensity and frequency of the transverse vibrations



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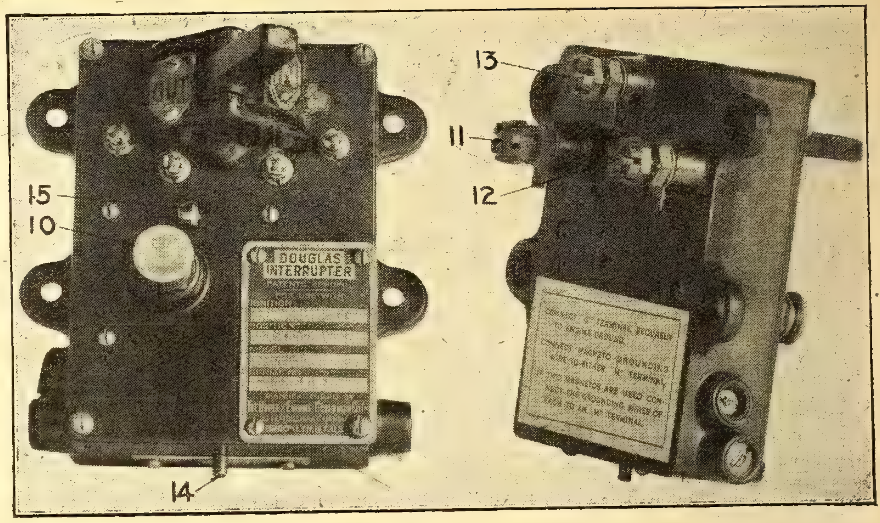


The Exterior of the Douglas Interrupter.

of the engine, and the strength of the springs. The extended end of the trigger 3 is constantly pressed towards the floor of the instrument by the compression spring 4, and engages the latch 5. On the under side of the trigger 3 there is an inclined surface 6, by which the trigger is raised. A ball-pointed hardened steel screw is fitted into the bar directly beneath the trigger, and engages an inclined surface and thus lifts the trigger when the swing of the bar is sufficient. When the trigger is lifted the latch 5, held under tension by the spring 7, is released and moves out of engagement with the trigger. The cam 8 is for the resetting of the latch through rotating it back into position by means of the push-button 10, from the outside of the instrument.

The compression spring 9, presenting an unbalanced force, is designed to prevent the bar from disengaging the latch 5 as a result of cylinder misses coinciding with bad vibration periods of the engine, etc., thus increasing the amplitude of the swing of the bar through synchronism, or from lateral shocks to which the plane may be subjected in landing. An intense oscillating shock transverse to the axis of the engine, such as an unbalanced engine-propeller torque reaction resulting from the breaking of a propeller at speed, are the types of shock from which the instrument is designed to operate, and to which it will immediately respond. Under such conditions the bar will swing through its full amplitude, raise the trigger, which releases the latch, and thus interrupts the ignition by earthing the magnetos. From the interrupter terminals 11 and 12 wires are connected to the earth terminals of the magnetos and from the terminal 13 of the interrupter a wire is connected to the engine earth. On the disengagement of the latch 5 a triple contact is made between the interrupter terminals 11, 12, and 13.

Provision is made for testing by the pilot before each flight of the operation of the interrupter. Such a test can be conducted in ten seconds. The handle 14, which projects through a slot in the end of the instrument, is pushed gently to the left until the red spot 15 of the tell-tale, which bears a luminous cross for night flying, appears. Before the engine stops the instrument may be re-set by pressing down on the button 10 until the red spot of the tell-tale disappears. Should the engine not stop it would indicate that either the interrupter switch is in the wrong position or that its wiring system, etc., is defective.

A manually operated switch is provided with each instrument, by which the interrupter may be thrown into and out of the grounding circuit as desired.

Interrupters are furnished of two general types, maker and breaker instruments, and in several models to best suit various engine and aeroplane conditions.

Maker-instruments, such as the one just described, are intended for magneto-ignition engines, in which cases there is no flow of current through the instrument, excepting at the moment of interrupting the ignition.

Breaker-instruments are intended for Liberty engines using the Delco system, where the flow of the current is constantly through the instrument, and where two separate current channels are provided, because of the double distributor system used on these engines. The interruption of the ignition results from breaking these channels.

The interrupter is manufactured in five models to suit the ignition system employed and the requirements of the engine installation.

When the engine is on the wings the interrupter is mounted on a weather-proof casing attached to an engine-bearer.

The weight of the instrument is under ten ounces.

American naval pilots who have flown interrupter-equipped machines for over six months state that during that period the ignition of the Liberty engines has at no time been adversely affected. The operation of the instrument has been most satisfactory in every way, and has fully met all of the claims which have been made for it.

Various tests of the interrupter made by the United States Navy Department have shown in general the following results:—

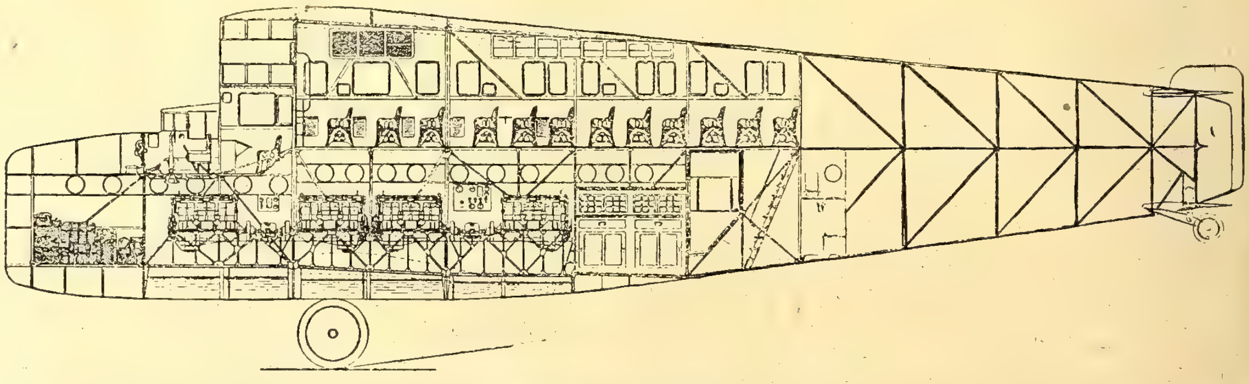
(a) As nearly as it has been possible to determine the instrument will operate within one complete revolution of the engine following the propeller breakage, or within a time interval of one twenty-third of a second.

(b) It may be depended upon to do this every time that such a breakage occurs, as shown by tests in the air and on the ground.

(c) It will not interfere with the efficiency of the ignition system, nor has it caused complications therein of any kind.

(d) The electrical resistance of the interrupter on Liberty engines has been determined by a representative of the Delco Company as being less than 0.03 to 0.05 ohm, representing a loss of potential in the primary current to the distributors of 0.33 to 0.55 of one per cent., a value which is entirely negligible.

The design, workmanship, and materials employed in the construction of the interrupter are of high quality. The latches and triggers of the instruments are of hardened steel heavily silver-plated to minimise electrical resistance, to provide better contacts, and to prevent corrosion. Other contact parts are of hard brass silver- or nickel-plated. All of the springs employed are of phosphor-bronze. The electrical connections between the instrument base and its cover are by means of substantial screws which act not only as binding posts, but as attachment members holding the cover in place. These are all protected by castelled nuts and cotter pins. Insulating parts consist of bakelite castings.



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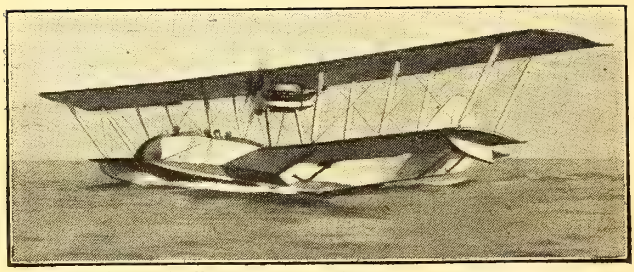


The Airco 23 Flying Boat (450 h.p. Napier engine).

As far back as 1912 the Aircraft Manufacturing Company was delivering Henri and Maurice Farman seaplanes to the British Government and was, therefore, among the pioneers of British seaplane construction. The Company can claim, also, to be the earliest exponents of launching torpedoes from seaplanes and flying-boats.

When the war came, the Company, in collaboration with Commander J. C. Porte, carried out the detail designs and construction of the famous Porte flying-boat. This boat—the first large development of the original American or Curtiss machine—was at that time the biggest flying-boat in the world.

After the production of the first of these machines—officially known in the Services as the Porte "Baby" and the forerunner in this country of all big aeroplanes and seaplanes—orders were received for a large number, which necessitated the provision of a seaplane base. Whereupon the Company acquired the works at Southampton and Hampton Wick of Messrs. May, Harden, and May.

The hulls of the first experimental Porte boats were built at the works at Southampton, and the wing construction, engine installation, and controls made and finished at the Company's works at Hendon. The machine itself was designed in the seaplane drawing office of the Aircraft Manufacturing Company, under the supervision of Commander Porte.

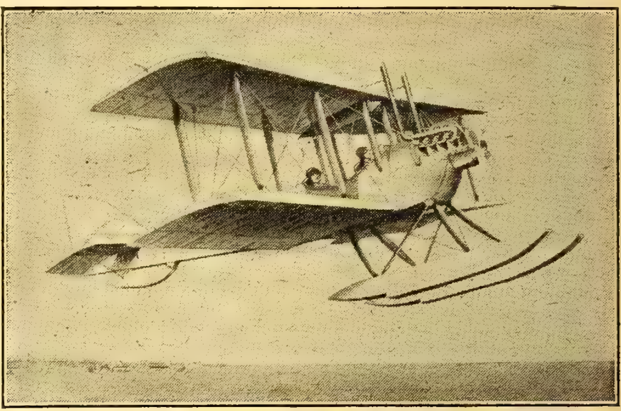
Orders were received subsequently for a number of F.2A. flying-boats, which were direct developments of the Porte boat, a good deal of detail design and refinement being left to the seaplane drawing office. The result, indeed, of the Company's acquiring this seaplane base was that, in addition to designing the hulls for the Company's own productions, the hulls of many types of flying-boats, experimental or otherwise—with the exception of those designed by Commander Porte, at Felixstowe—emanated either from Southampton or Hampton Wick.

Where the special skill lies in designing a flying-boat hull is in the knowledge of how to make it strong enough and, at the same time, to keep the weight down to a minimum; and in this regard it is interesting to note that each hull produced by the firm has been lighter than its predecessor, whilst actually possessing an increased strength. Each, though beautifully streamlined, thereby reducing head-resistance to a minimum, has ample accommodation for its purpose, as well as room for the disposal of its main petrol tanks.

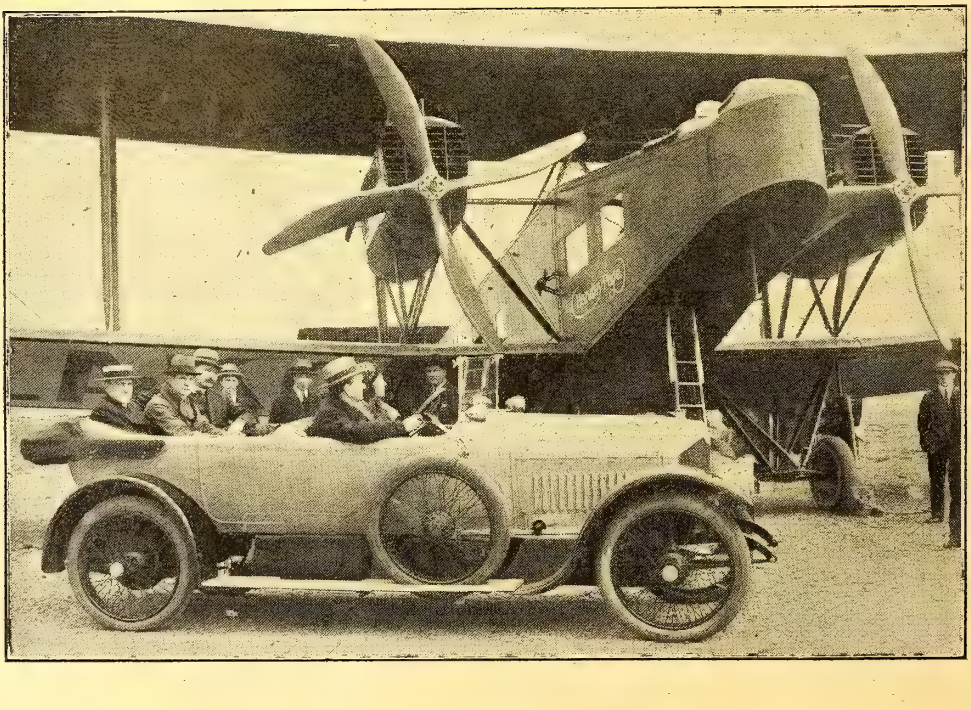
Based on its large experience of seaplane and boat construction the Company have now designed commercial-type machines which represent the fruit of all this experience, and which embody the most up-to-date ideas.

The Airco 23, of which a preliminary drawing is reproduced on this page, is a flying-boat designed to accommodate two pilots and six passengers. The engine is a 450-h.p. Napier "Lion." The speed of the machine is estimated to be 100 miles an hour at 5,000 feet, while it will have an endurance of 500 miles. Its useful load, comprising two pilots and passengers, represents 1,440 lb.

The Airco 6 seaplane—of which a drawing is also given—is constructed on the lines of the D.H. or Airco 6 aeroplane, which was used with such success, and for so many purposes, during the war. The machine was designed originally as a dual-control school machine. It was also used for reconnaissance, and for bombing submarines, and, more recently, as an ambulance machine. One of its chief features is its simplicity of construction, making it an ideal machine for the owner-flyer, and greatly reducing the flying cost and repair bill. As a joy-riding seaplane it is considered that it will be unequalled. Accommodation is provided for the pilot and one passenger. The engine is a 90-h.p. R.A.F. 1A, and the speed of the machine, at 1,000 feet, 60 miles an hour. It has a "ceiling" at 5,000 feet, gets off the water at 42 miles an hour and has an endurance of 180 miles. Its total weight is 2,440 lb.



The Airco 6 Seaplane (90 h.p. R.A.F. engine).



The accompanying photograph gives a good idea of the size of an ordinary Handley Page twin-engined passenger machine compared with a modern touring car. The car is a 25/30 h.p. R.F.C. model Crossley. Mr. Handley Page is seen at the wheel, and Lieut.-Col. Sholto Douglas, one of the chief Handley Page pilots, is beside him.

The photograph was taken on an occasion on which a consignment of woollen goods was sent over to the Paris depot of Messrs. Bass, Walker and Company, of 2, Argyle Street, London. To accelerate the dispatch of these goods, a 25/30 h.p. Crossley was placed at the disposal of Messrs. Lavington Bros., the well-known shippers of Old Bailey, who arranged the shipment for Messrs. Bass, Walker and Company. The goods were conveyed to Hounslow by the car, and within 40 minutes of leaving London were on their way to Paris.

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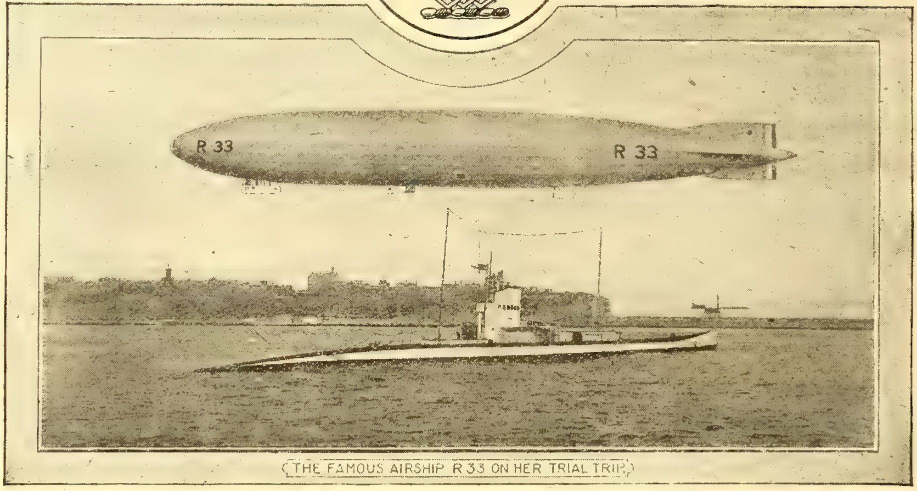

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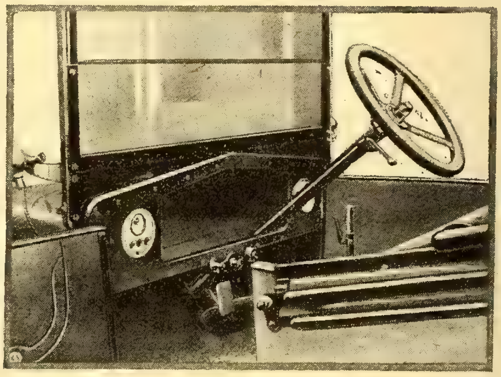

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GREAT BRITAIN.

CIVIL AERODROMES.

The Air Ministry announced on Oct. 11th that the following lists of aerodromes are issued as an addition or in amendment to the lists already published :—

LIST A. (Service Aerodromes only available for Civilian Machines in emergency.)

AMENDMENT.—The following aerodrome has been transferred to List E and is now published in that list :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Detling	Bearstead	Maidstone

LIST B. (Aerodromes temporarily retained for Service purposes.)

AMENDMENTS.—The following aerodromes have been transferred to List E, and published in that list previously :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Beverley	Beverley	Beverley
Chattis Hill	Stockbridge	Winchester
Doncaster	Doncaster	Doncaster
Killingholme	Harbrough	Grimsby
London Colney	Radlett	St. Albans
Penston	Macmerry	Haddington
Seaton Carew	Seaton Carew	West Hartlepool
Shoreham	Shoreham	Shoreham-by-Sea

LIST C. (Aerodromes temporarily retained for Service purposes.)

AMENDMENTS.—The following aerodromes have been transferred to List E, and are now published in that list :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Buckminster	Witham	Grantham
Harpswell	Kirton Lindsey	Gainsborough

LIST D. Aerodromes licensed as suitable for "Avro (504 K) and similar types of Aircraft" only. Except in very few instances accommodation does not exist. The licences have also in the majority of cases been issued for limited periods.

Aerodrome.	Location of Aerodrome.	Nearest Large Town.
Gleneagles	Adjoins station on main Glasgow-Perth railway.	Crieff
Coleford	South of Coleford on road parallel to G.W.R. line.	Gloucester
Wormwood Scrubs	S.W. corner of Wormwood Scrubs.	London (Hammersmith)
West Blatchington	W. of Hove Park, Brighton, at S.E. corner of W. Blatchington.	Brighton

LIST E. (Stations no longer in use by the R.A.F.

These stations have been passed to the Government Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing grounds in the immediate neighbourhood.

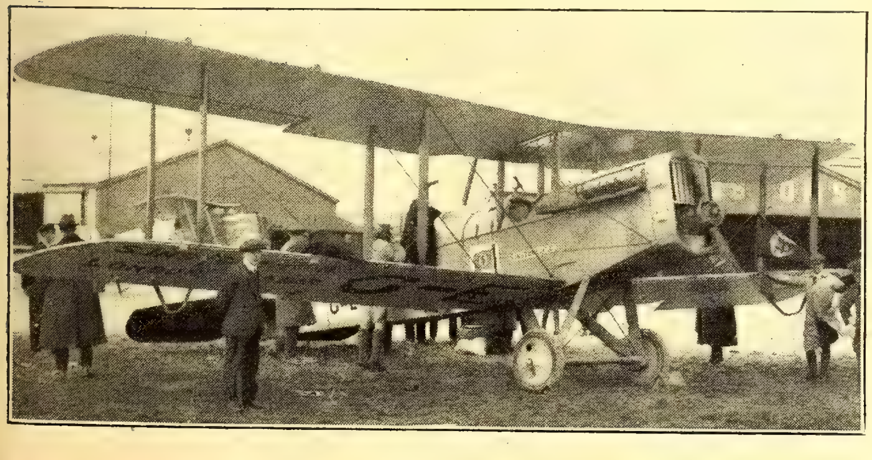
Aerodrome.	Nearest Railway Station	Nearest Large Town.
Buckminster	Witham	Grantham
Detling	Bearstead	Maidstone
Harpswell	Kirton Lindsey	Gainsborough

CONTINENTAL AIR SERVICES.

THE AIRCO SERVICE.

Eight weeks' continuous flying on the London-Paris service has now been completed by Aircraft Transport and Travel, Ltd. Out of 123 scheduled flights, 119 have been successfully completed. Approximately 30,000 miles have been flown on the service, making 283 flying hours.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Oct. 13th	D.H. 4a	Lt. Shaw	12.45 p m.	3.00 p.m.			0
	D.H. 4a	Lt. Chattaway			12.30 p.m.	3.02 p m.	2
	D.H. 16	Capt. Baylis			12.30 p.m		3
	D H. 9	Lt. Armstrong			3.00 p m.	5 10 p.m.	1
Oct 14th	D.H. 16	Lt. McMullin	12.40 p.m.	3 00 p.m.			1
	D H. 4a	Lt. Shaw			11 55 p m.	2.20 p.m.	2
	D.H 4a	Lt. Lindley			12 30 p m.	3.17 p.m.	2
Oct. 15th	D.H. 9	Lt. Chattaway	11 45 a.m.	1.50 p.m.			nil
	D.H. 4a	Lt. Tebbitt	12 45 p.m.	3.30 p.m			0
	D H. 16	Lt. McMullin			12.35 p m.	3.00 p m.	2
Oct. 16th	D.H. 16	Lt. Armstrong	1 00 p.m.	3.15 p.m.			4
	D.H 9,R	Capt Gathergood	1.02 p m.	2 22 p.m.			0
	D.H. 4a	Lt Lindley	1 40 p.m.	3 25 p.m.			1
	D.H. 16	Lt. Lawford	2 54 p.m.	4.39 p.m.			3
	D.H. 4a	Lt. Chattaway			12.30 p.m.	3.25 p.m	0
Oct. 17th	D.H. 4a	Lt. Powell	12.30 p.m.	2 45 p m.			2
	D.H. 4a	Lt. McMullin	12.34 p m.	2 52 p.m.			2
	D.H. 9	Lt. Tebbitt			12.30 p.m.	3.22 p.m.	2
	D.H. 16	Lt. Lawford			12.30 p.m.	3.30 p.m.	3
Oct. 18th	D.H. 4a	Lt. Tebbitt	12.30 p.m.	2.55 p.m.			1
	D.H. 4a	Lt. Lindley			12.30 p.m.	2.55 p.m.	2
	D.H. 4a	Lt. Armstrong			12 30 p.m.	3.00 p.m.	2



THE FIRST PRIVATE COMMERCIAL AEROPLANE.—A D.H.4 biplane with a 375 h.p. Rolls-Royce Eagle VIII engine owned by S. Instone and Co., Ltd., steamship owners. The photograph shows the machine leaving for Paris on its first journey from Hounslow on Oct. 13th.

The firm's pilot, Lieut. F. L. Barnard (late R.A.F.), flew the machine on the same day from Cardiff to Hounslow in 50 minutes.

The machine carries the "house flag" of Instone and Co.

On Oct. 13th the D.H.16, piloted by Capt. Baylis, which left Le Bourget at 12.30 p.m., had a forced landing at Grand Villier, between Beauvais and Poix, owing to engine trouble. The three passengers and parcels were conveyed back to Paris and continued their journey by air on another machine the next day.

On Oct. 16th the D.H.9.R. machine, piloted by Capt. Gathergood, made the flight to Paris at the rate of 180 m.p.h.

Mr. C. B. Cochran flew from Hounslow to Boulogne in 40 min. in an Airco biplane, collected some costumes for his new production, "Maggie," and returned to London by air on Oct. 16th.

The Handley Page Services.

During the week ending Oct. 15th Handley Page Transport, Ltd., in conjunction with Messageries Aeriennes (Paris) (Bréguet machines), carried 60 passengers and 2,925 lb. of goods on their London-Paris service.

During the same week 20 passengers and 600 lb. of luggage were carried between London and Brussels. This service shows increasing popularity, but the carrying of merchandise by air to Belgium is not yet permitted.

An oil-painting worth £500, consigned by Messrs. Duveen to their Paris branch, was carried in the machine which left Hounslow on Oct. 18th.

The B.A.T. Service.

On the regular weekly service inaugurated by the British Aerial Transport Co. between London and Holland a saloon passenger biplane left Hounslow on Oct. 16th, piloted by Mr. C. Turner. The machine arrived at Amsterdam inside three hours.

On Wednesday, Oct 22nd, a saloon passenger machine with the full complement of passengers was due to leave Hounslow for Amsterdam, piloted by Maj. C. Draper.

London.

Hendon.—Fifty-eight passengers were taken up at the London Aerodrome by the Grahame-White Aviation Co. during the week ending Oct. 18th. Some 5,100 people have had flights in Avro machines during the summer. There are two pupils under instruction, a Miss Cadell and a Mr. Bryce, who will shortly be flying alone.

Hounslow.—A Vickers-Vimy commercial aeroplane, carrying two pilots and a mechanic, left Hounslow at 10.30 a.m. on Oct. 17th and arrived at Le Bourget (Paris) at 1.10 p.m. This machine will give exhibition flights at various places on the Continent.

An Ambitious Airship Scheme.

It is stated that a company named the Great Northern Aerial Syndicate has been formed to link up the world by an airship service. It is stated in the "Blackburn Weekly Telegraph" of Sept. 27th that the syndicate seek to acquire ground to the north of Southport, adjoining the golf course, where they propose to erect a mooring tower with an internal lift.

Three types of airships are said to be in contemplation to carry 32, 40, and 150 passengers. The smaller types are to be used for service in Great Britain and to the Continent. The largest type have had the following routes laid down for them :—(1) Liverpool to York, Hull, Copenhagen, Stockholm, Petrograd, Tomsk, Pekin, San Francisco, New York, Queenstown, and Dublin; (2) Liverpool to London, Paris, Barrow, Colombo, Perth, Melbourne, or Sydney; (3) Liverpool to Cardiff, Lisbon, Sierra Leone, Capetown, Buenos Ayres; (4) to India, Belgium, Germany, Austria, Turkey, and Persia.

The larger airships are to be fitted up in a luxurious style, with carpeted floors, and folding armchairs, similar to the Pullman car, with large windows. A balcony will run along the outside of the car. The cost per mile is put at about half the cost of a taxi-fare to-day, approximately about 9d. per mile.

Bournemouth.

The Supermarine Aviation Works, Ltd., have announced that their flying-boats will continue to carry passengers on suitable and fine days during the autumn and winter seasons at Bournemouth. A large number of visitors are always at the resort in the coming seasons, and particularly fine weather is always experienced during some periods.

The booking agents are Messrs. Sydenham's Library at the Pier Approach. Flights can be made for two guineas and three guineas. Passengers will also be carried to Southampton in the afternoons for four guineas in minimum parties of three.

Brooklands.

The following notes, dated Oct. 19th, have been received from a correspondent :—

Two biplanes, entered for the flight to Australia, have been tested recently at Brooklands. One is the Sopwith "Wallaby," of which Capt. Matthews and Serjt. Kay are the "crew."

The Martinsyde machine which will also attempt the flight is practically ready. Capt. Howell will be the pilot. No information is yet to hand as regards the date when the Martinsyde will start. This machine is very similar to the Martinsyde Transatlantic machine in appearance and in performance. It has a "Falcon" 285-h.p. Rolls-Royce engine, and it is a two-seater.

Mr. F. P. Raynham, who until recently had been testing machines for Martinsyde, Ltd., and Vickers, Ltd., at Brooklands, has flown to Spain on an F.4, presumably for business purposes in connection with Martinsyde, Ltd. Lt. Nisbet, who was second in the Aerial Derby on a Martinsyde F.4, has been engaged as a test pilot by Martinsyde, Ltd. He has recently flown in test flights over the sea both the Australian flight machine and a biplane which his firm have constructed for a film company.

The sea tests of the former machine were very satisfactory. Some alterations and modifications are being made to the film machine.

Martinsyde, Ltd., have lately greatly reduced the number of their employees, and are engaged in manufacturing various small and useful articles. They have produced a two-seater machine similar to their F.4, having practically the same performance. It is expected that this machine will be placed on the market as a sporting model.

Leighton Buzzard.

According to the "Morning Post" of October 8th a new Vickers "Vimy" bomber, fitted with two Rolls-Royce engines, was destroyed by fire recently at Morgan and Co.'s aerodrome at Leighton Buzzard. The value of the aeroplane was over £8,000.

The fire was caused by a workman attempting to take petrol from one of the tanks while a hurricane lamp was near.

Newcastle.

For the first time in the history of commercial aviation tinned fish was carried by aeroplane on Oct. 10th from Newcastle to Edinburgh. An Avro biplane was hired by Angus Watson and Co., canned goods manufacturers, of Newcastle, from Vickers, Ltd., and started on its journey at 9.30 a.m.

It was piloted by Capt. Simpson (late R.A.F.), and carried a cargo of 333 lb. of canned goods consigned to R. and T. Gibson, provision merchants, of Edinburgh. The aeroplane arrived at Turnhouse Aerodrome (Edinburgh) at noon.

A large party witnessed its arrival at Edinburgh, including the Senior Magistrate and representatives of the Edinburgh Chamber of Commerce and the Rotary Club. The company were afterwards entertained to lunch.

The purpose of the flight is not quite clear, but some benefit accrued therefrom as several people obtained a good free lunch as a result of its success.

Southampton.

Demonstration and passenger flights will be given by the Supermarine Aviation Works, Ltd., in their flying-boats at Woolston throughout the winter months.

IRELAND.

At a meeting of the Pembroke Urban Council on Oct. 13th a letter was read from A. V. Roe and Co., Ltd., asking the Council's permission to land their aeroplanes at Merrion Strand, as they proposed to link up by air the principal towns in Ireland, starting for one year from May 1st, 1920.

It was the intention of the company to land and take up passengers at Merrion Strand for services to Cork and Belfast, etc. From the Strand the service will have to be tidal.

CANADA.

Capt. Baskerville (late 117th Squadron R.A.F.) proposes to establish an aerial service in Thousand Islands next summer.

BRAZIL.

According to the "Times" of Oct. 15th the Brazilian Budget for 1920 includes the establishment of an aerial postal service. The Government's loan will amount to £5,000,000.

CHINA.

The Chinese Government has entered into a contract with Vickers, Ltd., for the supply of a large number of Vickers-Vimy commercial aeroplanes. It will be remembered that Handley Page, Ltd., have also built several machines for China.

An issue of £1,800,000 in Treasury notes is being made, all to be expended in the development of commercial aviation. This sum will meet the cost of the purchase of machines, construction of aerodromes, repair depots, and administration.

DENMARK.

The Danish correspondent of The Aeroplane writes :—

Flying Activity.

With the exception that civil flying was not impossible during the war from universal concentration on military aircraft production but from lack of fuel, aviation has developed here much along the same lines as in England, commercial

The Success of the R.34.

Extract from General Maitland's Log:

MIDNIGHT—

> "*As we lay in our hammocks we listened to the rain beating pitilessly down on the outer cover of our trusty ship of the air, and our feelings, despite the weather, are those of complete confidence and security.*"

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enterprise having during this season been interfered with by official regulations. The chief activities have been in the joyriding business field, newspapers coming next in the employment of the new transport means, so far mainly from the advertising point of war.

The former commanding officer of the Richthofen squadron, Lieut. Goering, has flown a part of the provincial edition of the weekly paper, the "Home," to Odense, being, however, unable to carry out the other scheduled flight to Aalborg. The Danish former test pilot Reichert, by Albatros, has on his illuminated biplane bombarded Copenhagen by night on behalf of a penny paper, dropping cases containing money, while the public could further win prizes from guessing his correct height when throwing lights above some squares. The Sleswig pilot Schmidt has started a provincial trip, arranged by the German technical manager, Klatte, of Danish Air Express. The passenger and author, Emil Bonnelyoke, read papers on the psychology of Flying in the evening in the cities called on.

THE FARMAN GOLIATH.

Having carried out a number of joy-rides from the Lundtofte aerodrome over the capital and the surroundings, with paying passengers and a number of guests, including members of the Press and the Air Commission, the Farman Goliath was unfortunate when intending to return to Paris with passengers at £80 each. First a Custom officer turned up, asking a duty of £550, as the foreign aircraft had not only paid the country a flying visit, but carried out advertised joyriding business. Then the crankshaft breaking of the one 300-h.p. Salmson motors at the Goliath's arrival was repeated with the other engine. So the French twin-engined biplane is still in Copenhagen, and Lieut. Krause-Jensen has returned to Paris.

TOO LATE.

When the breakdown of a Titan-made crane held up the unloading of a steamer with coal cargo in Aarhus, the firm, Kampmann, Herskind, and Co., in these coal-scarce times, resolved to have the missing gear wheel sent by aeroplane from the Copenhagen works. Owing to a strong head wind the pilot, Flt. Serjt. Bjarkow, on an L.V.G. biplane, ran short of petrol by Kallundborg and had to bring the wheel to the ferry, and thus it arrived too late for the object.

THE FIRST ITALIAN ARRIVALS.

The first of the many and often-announced Italian aeroplanes to arrive was a 200 h.p. engined Savoia seaplane, piloted by Lieut. Count di Robilant, with mechanic Bramucci as passenger, who arrived at Copenhagen (having crossed the Alps and flown along the Rhine Valley to Amsterdam) *via* Cuxhafen, the Kiel Channel, and Nakskov, where he made an intermediate landing to replenish, having run short of lubricating oil. An accompanying sister craft made a forced landing at Borkum, in Germany.

Count di Robilant continued after some days' stay to Stockholm, which was not reached in a non-stop flight, and returned by railway to go to Amsterdam and arrange for a squadron flight to Scandinavia of some of the pilots staying there, the route to be Amsterdam, Gothenburg, Stockholm, Copenhagen.

ICELAND.

The Danish correspondent of THE AEROPLANE writes :—

The English-Danish Captain Cecil Faber (late R.A.F.) has returned from his pioneer flying work for the establishment of commercial aviation at the Danish island colony. His aeroplane was seen there recently for the first time. Capt. Faber has made 147 flights on an Avro biplane, the longest of which was to the Westmanna Islands, while his biggest number of flights carried out in one day amounted to 30.

FRANCE.

NEW FARMAN MACHINES.

M. Henri Farman has made several flights lately at Buc on the little Farman monoplane which he calls "Le Moustique," which is of 15 ft. span and is fitted with a 35 h.p. A.B.C. engine. The price to the public of this machine is £120. There is also a small two-seated Farman biplane, fitted with a 50 h.p. Le Rhone engine, which is to be sold complete for £300, or at least so rumour says. It has made many good flights recently. This machine is to be known as the "David" that the Farman "Goliath" may not feel unduly lonely.

A LONGCHAMPS INCIDENT.

On Oct. 12th a French aviator, M. Carignan, landed on the racecourse at Longchamps during the races to set down a lady passenger. He then endeavoured to fly back to his aerodrome, but sideslipped and fell before getting beyond the confines of Longchamps. The crowd endeavoured to attack him, but were prevented by the police. A summons is being taken out against the aviator on a charge of reckless flying. "L'Auto" aptly heads a paragraph dealing with this incident with the phrase "Les ennemis de l'aviation."

THE PRIX PEUGEOT

The aviette designed by M. Baligant is now known as the Baligant-Quénault, as M. Marcel Quénault will pilot it in its trials. M. Quénault was at one time an employee in the Voisin works at Billancourt.

THE AERO CLUB DE LA BRIE.

M. Dumesnil, Under-Secretary of State for Aeronautics during the war, has accepted the office of President d'honneur of the Aero Club de la Brie.

THE COUPE DEUTSCH.

Several attempts were to have been made on the Coupe Deutsch on Oct. 13th, so many that what is in truth partly a time contest bids fair to become a race. Fog and engine trouble eliminated most of the competitors, and only M. Jansen, flying a Nieuport monoplane (180 h.p. Le Rhone), completed the course of 200 kilometres 655 metres (Saint Germain-Meaux-Melun-Senlis-Saint Germain) in 46 min 55 sec.

Sadi Lecointe made three attempts to start, but fog and engine trouble forced him to land finally at Juvisy. M. Rost was also brought down owing to fog.

A correspondent writes :—"M. de Romanet has been having trouble with his Nieuport owing to irregular petrol delivery due to having a pressure installation instead of the Weymann vacuum system usual on Nieuport 29s."

On the following day M. Rost on a Gourdou-Leseurre monoplane (180 h.p. Hispano-Suiza) completed the circuit in 55 min., thus beating M. Jansen's speed, but not by the 10 per cent. which would have made him temporary holder of the cup.

M. de Romanet, Nieuport biplane (300 h.p. Hispano-Suiza), also made an attempt to complete the circuit, but was compelled to land owing to engine trouble. His speed was 183 miles an hour.

On Oct. 15th, M. Sadi Lecointe (Spad Herbemont biplane, 300 h.p. Hispano-Suiza) flew over the Coupe Deutsch circuit at a speed of 153.8 miles an hour.

The Commission Sportive de l'Aero Club de France met on Oct. 17th and homologated the following claims to the Coupe Deutsch, from which it will be seen that M. Sadi Lecointe is the temporary holder of the Coupe.

1. To the Société des Etablissements Nieuport :—Leth Jansen accomplished the circuit on Oct. 13th, 1919, at a speed of 124.6 miles an hour.
2. To M. Sadi Lecointe, who accomplished the circuit on Oct. 15th, 1919, at a speed of 153.8 miles an hour.

THE AUTOMOBILE SHOW.

Several firms whose interests in recent years have been solely or mainly centred in aeronautics are exhibiting motorcars of their own design and construction. Among these are the Farman, Voisin, and Gnome-Le Rhone firms. The cars are all expensive and large.

THE PARIS-MELBOURNE FLIGHT

M. Poulet and M. Benoist, his mechanic, on a Caudron biplane (two Le Rhone engines), left Issy-les-Moulineaux en route for Melbourne at 7 a.m. on Oct. 14th. They passed over Valence at 11.05 a.m. and landed at Fréjus shortly afterwards. As they flew over Saint Rambert d'Albon, where Védrines is buried, M. Poulet dropped a wreath to which was attached a card on which was inscribed the words, "A mon ami Védrines."

M. Poulet reached Centocelle aerodrome, near Rome, at 10.15 a.m. on Oct. 16th. Between Genoa and Rome he was brought down owing to low clouds and strong winds. After a short rest he continued his journey. On Oct. 17th he flew to Naples, and left that place on Oct. 20th at 6.30 a.m. for Salonika.

HOLLAND.

GERMAN AEROPLANES AT THE ELTA.

Interesting news comes from Holland concerning the fate of the E.L.T.A. Exhibition buildings and aerodrome. It seems that Herr Fokker has bought up the whole of the buildings and the aerodrome, and as soon as the Exhibition was over and the British machines had left he began filling the place with German machines of all sorts and sizes. The result is that at the present moment there are something like 200 assorted German aeroplanes stored in the E.L.T.A. buildings.

The big dismountable sheds put up by Alban Richards and Co. are still on the ground, and the representatives of the firm refuse to house German machines in them, consequently, those which are unable to crowd into the Exhibition buildings have to stand out in the open.

Evidently, the German Aircraft Industry is more alive to the possibilities of Holland as an aerial junction than is the

All the Business World will be There

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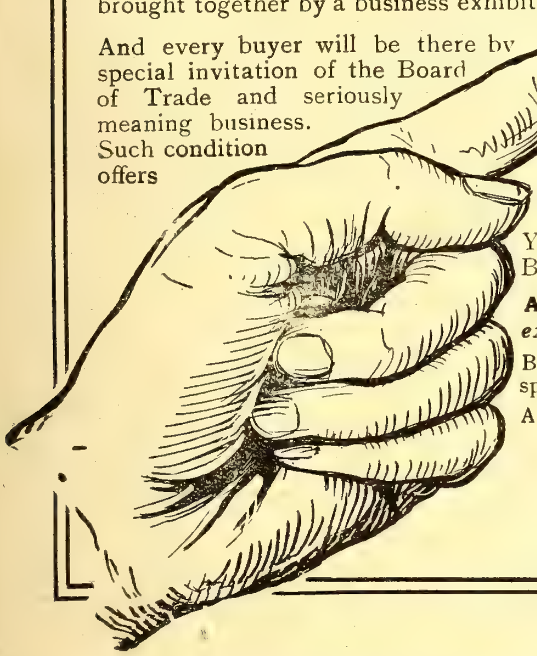

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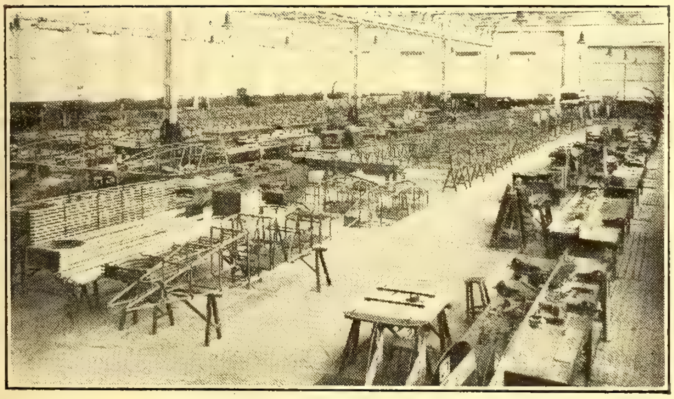

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British Aircraft Industry, but it would be interesting to see how these proceedings agree with the Peace Treaty.

The Italian correspondent of The Aeroplane writes :—

Eight millions of florins is mentioned as the very useful sum that Holland is spending on Italian aeroplanes.

ITALY.

British Help Refused.

The Italian correspondent of The Aeroplane writes :—

A report tells of an offer made to the authorities here by an English concern desirous of running certain aeroports in Italy, which kind help was, it is said, more kindly declined. This report may be more of the anti-British work of the enemy in our midst.

New Machines.

A small aeroplane of 3½ metres span is said to be constructing at Naples, and a four-motored Savoia seaplane is forecasted.

An Arrival at Turin.

The return to the Pozzo-Strada (Ansaldo) aerodrome at Turin of Engineer Brezzi and his pilot Stoppani, on their 300 h.p. Ansaldo, from their grand tour of the Central European capitals, was a great event. It had flown to Vienna-Warsaw-Berlin and return, a distance of 6,000 kilos. At Warsaw a second passenger was picked up who was carried over the "Archies" to Berlin. The machine (described in my account of the Taliedo Show) has so made good. It had previously done an Amsterdam and Brussels trip from Turin.

A Caproni with Floats.

The Caproni firm have always held that their large triplane could fly with floats. One has been thus fitted and flies capitally. It is stated that tests at Sesto Calende have led to business with an allied nation.

The "Airport" Co.

The big company promoted to run the Airport of Rome is moving fast. The "Aerobatics" School at Monte Celis, outside the city, is already in their hands, and Centocelle may follow.—T. S. H

SWEDEN.

The P.O. Flygkompani.

Major C. H. R. Johnston, of the "P.O. Flygkompani," wishes to correct the idea that the company have any connection with A. V. Roe and Co., Ltd. The "P.O. Flygkompani" started to operate in June with the purchase of two Avros and a D.H.6. The pilots are Major Johnston (late R.A.F.), Captain Saunders (late R.N.A.S.), and Lieut. Johnson (late R.A.F.). The latter returned to England on Oct. 3rd to fetch another machine over to Sweden.

The C.O. of the enterprise is Lieut. Herrström (late Swedish Horse Guards and Swedish Flying Corps). He is himself a pilot. The mechanics are half English and half Swedish. The company has a very excellent "impresario" in the person of a Swede, who incidentally made the first commercial flight from Sweden to Finland some years ago in a Morane Parasol.

They have been giving exhibition and passenger flights in different towns in Sweden, and so far have visited 25 towns, spending from two to three days in each, and in the larger towns a fortnight or more. In each place "stunt" flights are given first and then passengers are taken up at prices varying from 100 kr. up to 1,500 for an advertisement flight. The flight for 100 kr. takes about eight minutes; 150 kr. are charged for stunting. Many hundreds of passengers have been taken up at each town and no trouble or injury has been experienced.

The company's pilots are at present in the middle of a tour in the South of Sweden which will last until the approaching winter makes it necessary for them to return to headquarters at Barkarby and fit skids onto the machines. Then they will start for the North, where aeroplanes are less known than anywhere else in the country. At the flying school at headquarters, which is about 10 miles outside Stockholm, they have a waiting list of 10 pupils who wish to join when they have room.

They are the only British aviators in Sweden and the enterprise is financed equally with English and Swedish capital. The "joy-ride" side of civil flying cannot last for ever, but at present it provides the best way of making British men and machines popular in Sweden. At the same time it gives a useful profit. The company has plans maturing for other enterprises in connection with civil aviation, and when opportunity offers these will be opened up.

It would be possible to do a good business in British machines if firms were in a position to offer the goods at once and at reasonable terms. At present German machines are selling best owing to the low rate of exchange. There is an "Aerial Derby" coming off soon, and Major Johnston is living in hopes of obtaining a Scout machine to enter for it.

At last representatives of two English firms have arrived, namely Bristol and Vickers—both, unfortunately, without any specimens of their wares to exhibit. However, they are both looking round and seeing what is wanted in the country.

An Italian Visitor.

A large German-made canvas hangar has been put up for the reception of the Caproni machine which is due. Nothing further has been heard about it.

SWITZERLAND.

There was some delay after the arrival of Capt. H. M. Goode and Capt. Eric Bradley (late R.A.F.) in Switzerland before permission was given to the latter to fly in the country. He has now received permission to fly. No other foreign aviator has a similar authorisation.

Mr. Bradley is the instructor at M. Pethoud's "Aero Ecole d'Aviation" at Lausanne. The Avro machine which he flew to Switzerland has become very popular in the town, and pupils are joining the school in very satisfactory numbers.

The Italian correspondent of The Aeroplane writes :—

The Savoia machines have had considerable success on the Swiss lakes lately. One Pillichody is in Italy on the late Oscar Bider's unfinished work of introducing the machines for Swiss lake work.

UNITED STATES OF AMERICA.

A Handley Page Flight.

The Handley Page machine, which was intended for the Transatlantic flight, and afterwards attempted to meet the R.34 at New York, but crashed in a forced landing at Parrsborough (Nova Scotia), has now been repaired.

On Oct. 9th the machine left Parrsborough at 10.44 a.m., commanded by Vice-Admiral Kerr, and piloted by Major Brackley, carrying in all 11 passengers. Owing to very strong adverse winds encountered, the machine did not reach New York (625 miles) on the same day. It was forced to land at 11 p.m. at Greenport, Long Island, 95 miles from New York, owing to shortage of petrol.

The machine circled over the village for 20 minutes. The villagers built bonfires to show the machine a good landing-place. Major Brackley made a perfect landing in a field, and hearty greetings were exchanged all round.

Admiral Kerr said that the Handley Page had established a new record in carrying 11 passengers for a period of 12 hrs. 1 min. non-stop. The machine was to proceed to Mineola (New York) on the following morning.

Reuter stated on Oct. 8th from New York that a Caproni machine was going to ascend from Mineola to escort the Handley Page to the aerodrome.

[One imagines that a Caproni was chosen because "birds of a feather flock together," and also to minimise the chance of the machines missing seeing each other.—Ed.]

The Handley Page machine arrived at Mineola on Oct. 13th. A non-stop flight will shortly be attempted to Chicago with twelve passengers.

A Farman Agency.

Mr. W. Wallace Kellett has arrived recently from France as an agent for Henri and Maurice Farman. He stated that offices would be opened on Oct. 1st at West Thirty-fourth Street, New York.

Hangars and workshops are to be erected on Long Island, where the aeroplane parts shipped from France will be assembled. A three-passenger-carrying aeroplane is on the way from France for demonstration purposes.

An Inspection of Road Repairs.

Mr. Eddy Stinson recently carried a contractor in a Curtiss biplane in Ohio. They flew 300 ft. above a new brick road which was nearing completion and built by the contractor.

Learning to Fly from the Cinema.

During the war a school was instituted in America to teach pilots correct methods of handling an aeroplane by demonstrations on cinema screens. A civil aviation company have recently opened a similar establishment attached to an aerodrome where aspiring pilots may take a short theoretical course on the film.

The pupil takes his seat in an aeroplane in a dark room. Immediately in front of the machine is the screen, on which pictures are projected whilst an instructor gives an accompanying lecture. Pictures are shown demonstrating the correct methods of using the controls, for example, how to take off and land. The student is instructed to act as if the incidents depicted were actually taking place.

It is said that pupils who have passed a course of cinema tests have invariably proved careful and efficient pilots.

A HOAX RECALLED.

A Dutch writer has pointed out that the R.34 recently made a voyage from America to England in 75 hours, and it was just 75 years ago that Edgar Allan Poe published in the "New York Sun" his hoax about an English airship which flew across the Atlantic in 75 hours.

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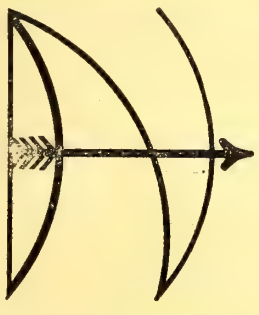

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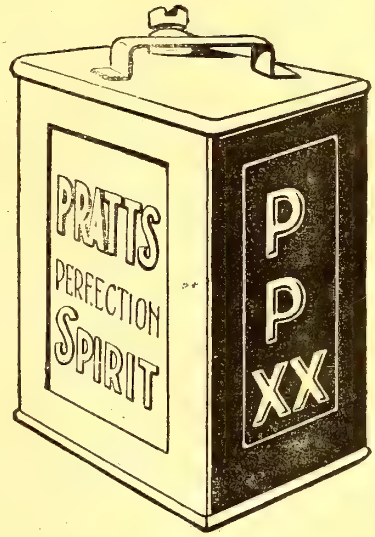

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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

ADMIRALTY, Oct. 17th.

The King has been pleased to approve of the award of the following Medals to the undermentioned men:

Meritorious Service Medal.

C.P.O. Mech., 2nd Grade, A. Beacham, R.N.A.S., O.N. F512; P.O. Mech. S. G. Cann, R.N.A.S., O.N. F4231; C.P.O. Mech., 3rd Grade, T. Clarke, R.N.A.S., O.N. F1627; Ldg. Mech. D. Cochrane, R.N.A.S., O.N. F4435; C.P.O. Mech., 3rd Grade, A. T. Corrin, R.N.A.S., O.N. F1630; C.P.O. Mech., 3rd Grade, P. Garner, R.N.A.S., O.N. F535; C.P.O. Mech., 3rd Grade, G. H. Gyton, R.N.A.S., O.N. F1004; P.O. Mech. R. A. Heath, R.N.A.S., O.N. F2821; C.P.O. Mech., 3rd Grade, H. Hulse, R.N.A.S., O.N. F493; C.P.O. Mech., 3rd Grade, H. Moliver, R.N.A.S., O.N. F1870; P.O. Mech. S. Parsons, R.N.A.S., O.N. F863; P.O. Mech. H. L. Rolt, R.N.A.S., O.N. F5678; P.O. Mech. D. D. Slater, R.N.A.S., O.N. F9501; P.O. (C.) H. C. Smith, R.N.A.S., O.N. F20242; C.P.O. Mech., 3rd Grade, A. W. H. Tracy, R.N.A.S., O.N. F6694; C.P.O. Mech., 3rd Grade, C. Underwood, R.N.A.S., O.N. F1591.

The following has been brought to the notice of the Admiralty for valuable services in the prosecution of the War:—C.P.O. Mech. R. Harper, R.N.A.S., O.N. 344641 (Po.).

MILITARY.

WAR OFFICE, Oct. 14th.

REGULAR FORCES.—R.F.C.—Mil. Wing.—Flying Officers (Observers). Lt. W. A. S. Brown, 6th Arg. and Suthd. Highrs., T.F., April 23rd, 1916; Temp. Sec. Lt. (on prob.) B. W. A. Ordish, Gen. List, and to be confirmed in his rank, Nov. 3rd, 1916.

WAR OFFICE, Oct. 15th.

ARMIES OF OCCUPATION.—TERRITORIAL FORCE.—INFANTRY.—4th Dorset R.—Sec. Lt. J. L. Fletcher to be Lt., and to remain secd. R.A.F., Nov. 30th, 1918.

INDIA OFFICE, Oct. 17th.

The King has approved the relinquishment by the undermentioned officer of his commn. in the Indian Army:—

Maj. A. H. W Elias Wynn, I.A., on transfer to R.A.F., Aug 1st.

AIR FORCE.

AIR MINISTRY, Oct. 10th.

The King has been pleased to give orders for the following appointments to the Most Excellent Order of the British Empire in recognition of distinguished services rendered during the War:—

O.B.E. (Military Division).

Ft. Lt. (A./Wing Comdr.) A. H. S. Baker, M.B.E.; Sqdn. Leader (A./Wing Comdr.) O. T. Boyd, M.C., A.F.C.; Wing Comdr. J. L. Forbes; Sqdn. Leader (A./Wing Comdr.) A. H. C. Kearsey, D.S.O.; Wing Comdr. C. Kirby; Wing Comdr. A. T. L. Nye; Wing Comdr. F. Ranken; Sqdn. Leader (A./Wing Comdr.) A. V. J. Richardson; Sqdn. Leader (A./Wing Comdr.) J. D. K. Restler; Wing Comdr. J. L. Travers; Lt.-Col. I. V. Davson; Sqdn. Leader J. P. Bourke; Flt. Lt. (A./Sqdn. Leader) A. P. Bowdler; Sqdn. Leader A. R. Boyle, M.C.; Sqdn. Leader A. G. H. Carr; Flt. Lt. (A./Sqdn. Leader) E. W. F. Cherry; Sqdn. Leader H. A. Cox; Sqdn. Leader W. J. Y. Guilfoyle, M.C.; Sqdn. Leader D. H. Kennedy; Sqdn Leader T. G. Leith, M.B.E.; Flying Officer (A./Sqdn. Leader) C. H. Lewis; Sqdn. Leader J. H. Lidderdale; Sqdn. Leader E. S. Saunders; Sqdn. Leader C. J. Stewart; Sqdn. Leader H. C. Wakefield; Sqdn. Leader R. H. Woods, M.C.; Maj. P. C. A. Bridgeman; Maj. E. C. Clements (R.A.M.C.T.); Capt. (A./Maj.) J. de Francia; Maj. A. C. Hartley; Maj. T. G. Hull; Capt. (Hon. Maj.) T. O. H. Lees, A.F.C.; Maj. O. C. Macpherson (Canada); Capt. (A./Maj.) J. M. Mitchell, M.B.E. (Canada); Maj. W. Park; Maj. D. B. Sanders; Maj. A. E. Snape; Flt. Lt. C. B. Baker; Flt. Lt. D. S. K. Crosbie; Flt. Lt. G. F. Evans; Flt. Lt. D. Gordon; Flt. Lt. H. T. Humfress; Flt. Lt. G. W. C. Kaye; Flt. Lt. D. Munro; Flt. Lt. G. G. Shepherd; Flt. Lt W. P. Smith; Flt. Lt. J. B. Walker.

Asst. Comdt. Miss K. L. Curlett, W.R.A.F.; A./Matron Mrs. L. O. Doughty-Wylie, M.B.E., R.R.C.

M.B.E. (Military Division).

Flying Officer (A./Sqdn. Leader) E. B. Barker; Sqdn. Leader H. N. Wylie; Flt. Lt. T. Armstrong; Flying Officer (A./Flt. Lt.) W. E. Berwick; Flying Officer (A./Flt. Lt.) H. B. Dakin; Flying Officer (A./Flt. Lt.) D. B. Gunn; Flt. Lt. H. G. Hutchinson; Flt. Lt. J. H. Ledeboer; Flt. Lt. J. A. C. Sumner; Flt. Lt. F. Tedman; Flt. Lt. F. K. Wells; Capt. L. Crooks; Capt. A. J. Dawson; Capt. I. N. Dracopoli; Capt. J. M. Furnival; Capt. T. Greening; Capt. G. Ralston; Flying Officer H. S. Burdett; Flying Officer D. P. Cameron; Flying Officer A. T. Hughes; Flying Officer H. D. Lehmann; Flying Officer W. L. Shaw; Flying Officer R. A. Shepheard-Walwyn; Flying Officer G. T. Stroud; Flying Officer C. H. Tancred; Flying Officer G. V. Walsh; Lt. A. C. Blackmore; Pilot Officer W. E. Critchley; Pilot Officer W. E. Humphreys; Pilot Officer T. A. Ross; Observer Officer G. C. Shortridge; Pilot Officer J. E. Tyrrell; Pilot Officer S. G. Young; Administrator Miss A. L. Chauncey, W.R.A.F.

The King has been pleased to approve of the undermentioned rewards to Officers and Other Ranks of the Royal Air Force in recognition of distinguished services rendered during the War:—

Distinguished Flying Cross.

Sqdn. Leader C. H. Stringer; Flt. Lt. E. D. Crundall; Flt. Lt. F. W. Hudson; Flt. Lt. the Hon. E. G. W. T. Knollys, M.B.E.; Flying Officer (A./Flt. Lt.) A. D. Makins; Flt. Lt. E. A. Packe; Flt. Lt. F. X. Russell; Flying Officer E. L. Barrington, M.C.; Flying Officer R. S. Jameson; Flying Officer F. C. C. Yeats-Brown; Lt. W. E. Bottrill (Can. Inf.); Lt. G. M. Eiloart; Pilot Officer H Lovelady; Pilot Officer F. W. Sinclair.

Air Force Cross.

Wing. Comdr. W. D. Beatty, C.B.E.; Sqdn. Leader (A./Wing Comdr.) O. T. Boyd, O.B.E., M.C.; Wing Comdr. R. B. Davies, V.C., D.S.O.; Sqdn. Leader (A./Wing Comdr.) E. H. Sparling; Sqdn. Leader (A./Wing Comdr.) L. Tomkinson; Flt. Lt. (A./Sqdn. Leader) D. G. Donald; Flt. Lt. (A./Sqdn. Leader) R. F. S. Leslie, D.S.C., D.F.C.; Sqdn. Leader T. K. Elmsley; Sqdn. Leader V. Gaskell-Blackburn; Sqdn. Leader M E. A. Wright, Flt. Lt. W. R. D. Acland, Flt. Lt. C H. Elliott-Smith; Flt. Lt. F. M. Fox; Flt. Lt. T. A. Gladstone; Flying Officer (A./Flt. Lt.) A. F. Hordern; Flt. Lt. F. Nuttall, M.C., D.F.C.; Flying Officer (A./Flt. Lt.) L. N. Sutherland; Capt. R. M. Stirling; Flying Officer W. Armstrong; Flying Officer G. H. Boyce; Flying Officer H. E. Cardwell; Flying Officer R. Douglas (S.A.D.F.); Flying Officer W. T. Garrood; Flying Officer L. A. C Hudson; Flying Officer L. M. Iles; Flying Officer A. Lanman; Flying Officer J. D. Mail; Flying Officer A. S. Meyrick Jones; Flying Officer J. McF. D. Mills; Flying Officer L. G. Paget; Flying Officer J. R. I. Scambler; Flying Officer G. J. Squires; Flying Officer M L. Trapagna-Leroy; Flying Officer S. S Turnbull; Lt H. A. Miller; Lt. J. A. Smale; Lt. A. J. G. Stryan, M.C.; Lt. N. T. Thorneloe; Pilot Officer C. N. C. Dickson; Pilot Officer F. de M. Hyde; Pilot Officer T. Rennie; Pilot Officer P. S. Riach; Pilot Officer L. G. Warren; Observer Officer E. A. Westall; Pilot Officer I. S. Woodhouse.

Air Force Medal.

No. 1357 Sjt.-Maj. 2 J. Barrett; No. 5232 Sjt.-Obs. J. Gilhooly.

Medal of the Order of the British Empire (for Gallant Conduct in France).

No. 46031 Cpl. F. Harrison.

Meritorious Service Medal.

No. 4395 Cpl. W. W. Adkins; No. 26805 Sjt. H. C. Ashwell; No. 30979 Cpl. F. S. Bowles; No. 219650 A./C. 1 C. H. Greenwood; No. 40573 Cpl. T. W. E. Heath; No. 1169 S./M. 1 J. Hudson; No. 215 S./M. 1 J. Kerr; No. 302427 Cpl. J. Lister; No. 1783 Flt. Sjt. J. F. Morrison; No. 18304 Flt. Sjt. J. E. Pays; No. 36955 Cpl. G. Papworth; No. 23725 Sjt. W. J. Payne; No. 93866 Sjt. J. Poole; No. 33436 L.A.C. A. J. Pickering; No. 37883 Flt. Sjt G. H Toogood; No. 132183 A./C./H. 2 J. H. Walker.

The following have been mentioned in dispatches and reports for Distinguished Service in the Field:—

Sqdn. Leader A. G. H. Carr; Sqdn. Leader W. J. Y. Guilfoyle; Sqdn. Leader H. C. Wakefield; Flying Officer J. R. Hovenden; Flying Officer E. F. L. Taylor; Lt. J. McL. Pearson; Lt. McL. N. Straight; No. 42792 Sjt. H. S. Dodd; No. 403621 Sjt. R. Fairbrother; No. 44805 Sjt. T. W. Harman; No. 66256 Cpl. F. W. J. Hunt; No. 115589 Sjt. H. E. Mee; No. 403646 Sjt. H. G. Mitchell; No. 90730 Sjt. G. T. Watt; No. 500 Flt. Sjt. T. E. Whittaker.

Royal Red Cross, 1st Class.

Actg. Matron Miss J. M. Cruickshank (Q.A.I.M.N.S.R.).

Foreign Decorations.

The King has granted unrestricted permission for the wearing of the following decorations conferred on the Officers and Other Ranks of the Royal Air Force indicated for valuable services rendered in connection with the War:—

Conferred by the President of the French Republic.

Legion of Honour (Croix de Chevalier).

Lt. G. G. Bell, D.F.C. (Canadian L. Forces); Lt. J. S. E. Townsend, R.N.V.R., attd. Naval Air Service.

Croix de Guerre, avec Palme.

Lt. D. A. Davies, D.F.C.; Lt. C. B. Green, D.F.C. (Can. L. Forces); Lt. H. J. Gibson; Lt. A. E de M. Jarvis, D.F.C. (Can. L. Forces).

Croix de Guerre, avec Etoile en Vermeil.

Lt. H. G. Davis, D.F.C.

Medaille Militaire.

No. 54267 Sjt.-Mech. C. R. L. Faley, D.C.M; No. 25197 Cpl. (A./Sjt.) H. R. Heys.

Medaille d'Honneur, avec Glaives en Vermeil.

Capt. A. F. Nimmo.

Medaille d'Honneur, avec Glaives en Argent.

No. 29991 Sjt. W. L. Reeve; No. 4705 Sjt. T. E. Williams

Medaille d'Honneur, avec Glaives en Bronze.

No. 4388 Cpl. J. C. Steadman.

Conferred by the King of Roumania.

Lt.-Col. R D. Waterhouse, C.M.G.

Conferred by the King of the Hellenes.

Greek Military Cross, 3rd Class.

Capt. F. A. Bates, M.C., A.F.C.

Medal of Military Merit, 3rd Class.

Sqdn. Leader S. G. Hodges, M.C., A.F.C.

AIR MINISTRY, Oct. 10th.

R.A.F.—The following Officers have been granted short service commns. in the ranks stated, with effect from Oct. 10th. They will retain their seny. in the substantive rank last held by them prior to the grant of the short service commn.:—

Sqdn. Leader.—R. C. Lane (T.).

Flight Lts.—J. H. D. M. Campbell (S.O.); H. Cooch, A.M.I.E.E. (T.); P. E. L. Gethin, A.F.C. (A.); E. L. Johnston, A.F.C. (Airship); C. O. F. Modin, D.S.C. (A.); A. J. Osborn (S.O.); G. W. Robarts, M.C. (A.); N. V. Wrigley (T.).

Flying Officers.—R. M. Grundy (Ad.); H. Hoad (T.); A. E. de M. Jarvis, D.F.C. (A.); A. A. Jones (T.); H. P.-G. Leigh (T.) (with effect from Oct. 6th); F. W. Martyn (T.); H. L. Rough, D.F.C. (A.); E. R. Webb (Ad.).

NOTE.—It is intended that officers empld. as Stores Officers or on "Q" duties shall belong to the new Stores Branch when formed. Officers appearing in this "Gazette" who are at present so empld. will be transferred to this Branch on its formation, and will accept these short service commns. on that condition. They will then come on to rates of pay of that Branch, but will meantime be permitted to draw the higher rates laid down in the new scheme for officers on the Gen. List. Any officer posted to the Stores Branch on its formation will then have the option of declining his short service commn

The notification appearing in "Gazette" of Sept. 12th appointing the following officers to short service commns is cancelled:—Flight Lt. H. J. Edgar (A. and S.); Flight Lt. A E. Siddons-Wilson (T.); Flying Officer J. H. Dale (T.); Flying Officer H B. Day (Ad.); Flying Officer A. G. Jarvis (A.); Flying Officer R. V. Kann (A.); Flying Officer G. A. Lingham, D.F.C. (A.); Flying Officer W. G Pudney (A.); Flying Officer A. E. Sweeting (A.).

The notification appearing in "Gazette" of Sept. 16th appointing the following officer to a short service commn. is cancelled:—Flight Lt. C. W. McCann (T.).

The second Christian name of Flight Lt. Charles Geoffrey Murray, O.B.E. (S.O.), is as now described, and not Godfrey, as stated in "Gazette," Sept. 12th.

The second Christian name of Flying Officer James Duff Hewitt (A.) is as now described, and not Dorr, as stated in "Gazette," Sept. 16th.

Flying Officer A. C. Lobley is granted a short service commn. with effect from Aug. 16th, not Sept. 12th as stated in "Gazette" of the latter date.

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R.A.F.—The following temp. appointments are made at the Air Ministry:—Staff Officers, 3rd Class.—(P.) Flight Lt. J. B. Cole-Hamilton, Sept. 26th; (T.) Flying Officer C. A. Longhurst, Sept. 30th.

The following temp. appointments are made:—Staff Officer, 2nd Class.—(Q.) Sqdn. Leader F. H. Moody, M.C., Sept. 1st.

Staff Officer, 3rd Class.—(P.) Flight Lt. D. P. Massy, Sept. 1st.

Flying Branch.—Lt.-Col. H. A Williamson, C.M.G., A.F.C., to be Lt.-Col. (A. and S.) on relinquishing appointment of Group Comdr., April 25th.

Capt. C. J. W. Darwin, D.S.O., to be Capt. (A.), from (T.), July 5th.

Flight Lt. A. McR. Moffatt to be Flight Lt. (A.), from (S.O.), Sept. 13th.

Sec. Lts. to be Lts.:—A. C. Clinton, Oct. 26th, 1918 (substituted for notification in "Gazette," July 2nd, 1918); S. Toby, Dec. 27th, 1918; (Hon. Capt.) G. E. Lange, Jan 1st; L. G. Destrube, June 6th; R. A. Wade, June 16th; F. Van Praagh, July 10th; S. L. Waters, July 24th.

P.F.O. A. J. Mantle, D.F.C. (late R.N.A.S.), is granted a temp. commn. as Sec. Lt. (O.), July 18th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. A. T. Essex (Sec. Lt., British W. Indies R.), July 29th; Lt. (Hon. Maj.) G. T. J. Barry (Maj., S. Wales Bord.), Sept. 11th; Lt. G. W. Kempster (Lt., Middx. R.), Sept. 15th; Maj. W. Pennefather (Lt.-Commdr., R.N.), Oct. 9th.

The following are transferred to unempld. list:—Sec. Lt. C. G. Ball, Sec. Lt. W. E. Beam, Sec. Lt. D. C. Brown, Sec. Lt. R. T. Hallchurch, Sec. Lt. A. J. Hartley, Sec. Lt. J. G. Heavey, Sec. Lt. L. W. Shelley, Sec. Lt. F. V. Sutton, Sec. Lt. A. W. C. Trew, Sec. Lt. W H. Vogan, Feb. 1st; Sec. Lt. H. C. Thomas, Feb. 2nd; Capt. D. M. Ballentyne, D.F.C., March 1st; Sec. Lt. H. C. Telfer, March 6th; Sec. Lt. H. J. Fox, March 15th; Lt. T. St. C. Douglas, April 12th; Sec. Lt. C. G. Urquhart, April 15th; Lt. R. G. Wood, April 17th; Lt. R. D. Caley, May 1st; Sec Lt. A. V Westwood, May 5th; Lt. R. Stirett Smith, May 7th; Sec. Lt. A. T. Jost, May 20th; Sec. Lt. C. L. Birmingham, May 28th; Capt. A. L. Taylor, June 8th (substituted for notification in "Gazette," July 15th); Sec. Lt. J. Jones, Lt. G. D. Jooste, Sec. Lt. C. K. Joubert, June 14th; Lt. A R. Kingsford, July 5th; Lt. N. S. Jones, Lt. E. A. L. F. Smith, July 12th; Sec. Lt. R. H Trollip, July 23rd; Sec. Lt. P. Davis, Aug. 1st; Lt. E. E. G. Nicholson, Aug. 2nd; Lt. D. Wilson, Sept. 1st; Lt. F. S. Bowles, Lt. I. F. Sutherland, Sept. 2nd; Capt. W. U. Dykes, Sept. 8th; Lt. G. L. Wright, Sept. 9th; Lt. H. O. Hope, Sec. Lt. R. Kelly, Sept. 10th; Capt. S. St. G. C. Belfield, Sec. Lt. (Hon. Lt.) F. W. V. Ellvers, Maj. L. P. Openshaw, Sec. Lt. D. J. Stewart, Sept. 15th; Sec. Lt. W. L. Chapman, Sec. Lt. H. S. Crees, Sept. 16th; Lt. M. A. Harker, Sec. Lt. J. W. Watson, Sec. Lt. A B. H. Youell, Sept 17th; Lt E. E. Blakemore, Lt. N. L. Desoer, Sept. 18th; Sec. Lt. R. D. Court, Lt. J. P. Cox, Sec Lt T. M. Hodgson, Sec. Lt. (Hon. Lt.) T. C. W. Sandland, Sept. 19th; Lt (Hon. Capt.) H. C. Higginbotham, Sec. Lt. A. Jenart, Sec. Lt D. A. F. Vavasour, Sept. 20th; Lt. W. E. F. Jones, D.F.C., Sept. 21st; Lt. W. F. O. Trench, Sept 22nd; Sec. Lt. W J. Mabb, Sec. Lt. A. H. Penstone, Sec. Lt A. Trantor, Sept. 23rd; Lt. H B. Pett, M C, Lt E. F. Rogers (substituted for notification in "Gazette," July 2nd), Lt. L. J. Sanderson, Sept. 24th; Sec. Lt. F. A. Douglas, Capt. R. W. Scoles, Capt. A. T. Sketchley, Sec. Lt. A. H. Sowter, Sept. 25th; Lt. T. Barr, Sec. Lt. W. A. F. Cowgill, Sec. Lt. G. W. A. Ireland, Sec. Lt. A. Thomson, Sept. 26th; Capt. C. V. Bassette, D.F.C., Sec. Lt. J. H. Cairns, Lt. W. S. Hill-Tout, Lt. J. R. Hopkins, D.F.C., Lt. K. Kennedy, Sec. Lt. P. W. McNaughton Sec. Lt. T. Nolan (substituted for notification in "Gazette," May 16th), Sec. Lt. P. A. Templeton, Lt. L. J Trounce, Lt. G. G. Wakeman, Capt. P. Wickens, A.F.C., Sept. 28th; Sec. Lt E. H. Biddle, Lt. F. G. Garratt, A.F.C., Sec. Lt. J. K. Pickard, Sept. 29th; Sec. Lt. L. E. Brockman, Lt. A. H. Burt, Sec. Lt. O. F. G. Crosby, Lt. W. H. Eastoe, Lt. T. E. Gohl, Sec. Lt. J. P. Melrose, Lt. R. G. Turner, Oct. 9th; Sec. Lt. E. W. T. Meeser, Lt. W H. Naylor, Sec. Lt. H. R. Roberts, Lt. J. D. Seal, Oct. 10th

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—A. W Hammond, M.C. (caused by wounds), Sept 6th; B. L. Blofeld (Lt., R. West Kent R.) (contracted on active service), Sept. 26th; A. McDunlop (contracted on active service), Sept. 30th.

G. H. Jacob, Oct. 4th (substituted for notification in "Gazette," Sept. 2nd.)

Lt. R. A. Way (Lt., Wilts R.), resigns his commission, Oct. 11th.

Sec. Lt C. C. Worboys relinquishes his commission on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 8th.

Lt. J. C. Sherwin is dismissed the service by sentence of a General Court-Martial, Sept. 12th.

Sec. Lt. L. E. G. Judge, M.C., to take rank and prec. as if his appt. as Sec. Lt. bore date Dec. 24th, 1918.

The Christian names of Sec. Lt. Edward Raymond Beesley are as now described, and not "Ernest Richard," as stated in "Gazette," June 4th, 1918.

The notification in "Gazette," April 4th, concerning Lt. J. H. Solomon is cancelled.

The notification in Gazette," June 6th, concerning Sec. Lt. E. W. A. Smith is cancelled.

Administrative Branch.—Sec. Lt A. F. Harris to be Sec. Lt., from (O.), July 29th.

Pilot Offr. D. S. G. Burton to be Pilot Offr., from (T.), Sept. 29th.

Sec. Lt. W. Farquharson to be Sec. Lt., from unemployed list, Sept. 24th, prec. next below H. H. Williams.

The following relinquish their commissions on ceasing to be employed:—Sec. Lt. R. F. Nicholls, Oct. 13th, 1918; Sec. Lt. G. Hull (Sec. Lt., R I. Rif.), Aug. 19th; Lt.-Col. (actg. Col.) A W. G McFall (Lt.-Col., retired, Militia), Sept. 18th; Capt. G. F. Earle (Capt., Rif. Bde.), Sept. 20th.

The following are transferred to unemployed list:—Sec. Lt. E. V. Wheeler, March 6th (substituted for notification in "Gazette," April 1st; Sec. Lt. C. G. Churchill-Woodman, March 13th; Sec. Lt. A. N. Ryles, Aug. 1st (substituted for notification in "Gazette," Sept 5th); Lt. H. Coulter, Sept. 3rd; Lt. J. H Bryen, Sept. 5th; Lt. D. A. Tomlinson, Sept. 8th; Lt. L. L. Wight, M.C., Sept 12th; Capt. H. Bryce-Smith, Sept. 15th; Sec. Lt. A. E. S. Whiting, Sept. 17th; Sec. Lt. H. M. Drabble, Sept. 18th; Sec. Lt. L. F Sewell, Sept. 23rd; Capt. W. A. Ecob, Sept. 25th;

Lt. (Hon. Capt.) H. O. D. Wilkins (Capt., Bedf. R.) resigns his commission, Oct. 11th.

Sec. Lt. J. H. Young relinquishes his commission on account of ill-health, and is permitted to retain his rank, Sept. 23rd.

Sec. Lt H. S. Neville relinquishes his commission on account of ill-health, and is permitted to retain his rank, Sept. 30th.

The notification in "Gazette" of Sept. 23rd concerning Flt. Lt. G. M. Broadburn and Flying Officer J. A H. Savage are cancelled.

Technical Branch.—Capt. (actg. Maj.) C. J. W. Darwin, D.S.O., retains actg. rank of Maj. whilst employed as Maj., Grade (A.), from (A.), from Feb. 8th to April 30th.

Capt C. J. W. Darwin, D.S.O., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A.), from (A.), from May 1st to July 4th.

Capt. F. Workman, M.C., to be Capt., Grade (A.), from (A.), May 9th, 1918 (substituted for notification in "Gazette" of Aug. 5th).

Sec. Lt. S. Jupp is graded for purposes of pay and allowances as Capt. whilst employed as Capt., Grade (A.), Oct. 9th, 1918 (substituted for notification in "Gazette" of May 1st).

Pilot Officer (Hon. Flying Officer) C. Bishop to be actg. Flight Lt. (without pay and allowances of that rank) whilst employed as Flight Lt., Grade (B.)

Sec. Lt. E. A. Moran-Smith to be Lt., Sept. 14th, 1918 (substituted for notification in "Gazette" of April 11th).

Pilot Officer G. H. J. Stein relinquishes the grading for pay and allowances as Flying Officer on ceasing to be employed as Flying Officer, Grade (A.), Sept. 19th.

Sec. Lt. J. S. McLeod to be Sec. Lt., Grade (B.) from (Ad.), June 15th.

Lt. (Hon. Maj.) C. W. Rowe, M.B.E. (Maj., Huntingdonshire Cyclist Bn.), relinquishes his commission on ceasing to be employed, Nov. 7th, 1918.

Squadron Leader H. R. Northover, O.B.E., M.C. (Maj., Canadian Ordnance Corps), relinquishes his commission on ceasing to be employed, June 30th.

Sec. Lt. (Hon. Lt.) J L. Bicknell (Lt., Gloucester R.), relinquishes his commission on ceasing to be employed, Oct. 3rd.

The following are transferred to unemployed list:—Sec. Lt. R. Johnston, July 3rd; Lt. W. H. R. Skudder, July 9th (substituted for the notification in the "Gazette" of July 18th; Capt. C. J. Turner, Sept. 2nd; Capt. H. W. Campion, Sept. 10th; Lt. R. G. Dalziel, Sept. 11th; Capt. W. V. Bonsor, Sec. Lt. R C. Handley-Ensor, Sept. 15th; Sec. Lt. (Hon. Lt.) E. W. C. Catling, Sec. Lt. A. H. Varian, Lt. H. M. Whitehead, Sept. 16th; Sec. Lt. F. W. Wheeler, Sept. 17th; Sec. Lt. C. R. Booth, Sec. Lt. A. Gold, Lt. L. A. Owen, Sept. 18th; Sec. Lt. (Hon. Lt.) L. T. G. Jefferson, Sept. 22nd; Capt S. A. Marples, Sept. 27th

The following Lts relinquish their commissions on account of ill-health contracted on active srevice and are permitted to retain their rank:—H. R. Stewart, Sept. 30th; A. A Westcott, Oct. 4th.

Medical Branch.—Lts. to be Capts.:—J. P Hosford, July 5th (substituted for notification in "Gazette," Aug. 19th, wherein this officer's surname was described as "Horsford"); G. W J. Bousfield (substituted for notification in "Gazette," Aug. 19th, wherein this officer's surname was described as "Bonsfield"); A. St. J. Hennessy (substituted for notification in "Gazette," Aug. 19th, wherein this officer's surname was described as "Hennessey"), July 29th.

Maj. H. F. Horne relinquishes his commn. on ceasing to be empld. and is granted rank of Lt.-Col., July 2nd.

The following are transferred to unempld. list:—Lt S. G. Smith, Sept. 28th; Capt. J. C. Hall, Sept. 30th.

The surname of Capt. K. B. Aikman is as now described, and not "Aickman," as stated in "Gazette," Aug. 19th.

The notification in "Gazette," July 11th, concerning Maj. H. F. Horne is cancelled. The following temp. appointments, W.R.A.F., are made:—Dep. Prin. to be Dep. Administrator, seny. from Aug. 24th, 1918:—Miss M. Allen, Aug. 1st

To be Asst. Administrators:—Mrs. V. M. Hume, July 21st; Miss D. E. Collins, Aug. 6th.

Dep. Administrator (actg. Administrator) Mrs. G. E. Dickinson reverts to substantive rank on ceasing to be empld. as Dep. Asst. Comdt., June 21st.

Asst. Administrator (actg. Administrator) M. A. Scholefield reverts to substantive rank on ceasing to be empld. as Dep. Asst. Comdt., Sept. 20th.

Dep. Administrator (actg. Administrator) Mrs. J. C Paterson reverts to rank of Asst. Administrator on ceasing to be empld. as Dep. Asst. Comdt., Sept. 23rd.

Dep. Administrator M. H. Grant reverts to rank of Asst. Administrator on ceasing to be empld. as Dep. Administrator, Sept 13th.

Asst. Administrator (actg. Dep. Administrator) K. J. Wright reverts to substantive rank on ceasing to be empld. as Dept. Administrator, Oct. 1st.

The following officers relinquish their appointments at their own request:—Dep. Administrators:—R. E. Booker, Aug. 18th; D. M. H. de Grave, Aug. 23rd; M. D. R. Leys, Aug. 31st; D. Moss, Sept. 1st; V. E. M. Gallagher (actg. Adm.), M. Wall, Sept. 3rd; A. Jones, Sept. 8th; E. A. Somerset, Sept. 10th; M. M. King, Sept. 13th; H. J. L. Fletcher, Sept. 14th; H. M. Reid (actg. Adm.), P. Baker, Sept. 15th; E. F. J. Simpson, Sept. 16th; P. O. Legard, Sept. 19th

Assist. Administrators.—F. A. S. Holbrow, June 30th; Mrs. C. M. Knight (actg. Dep. Adm.), July 7th; P. L. Gate, Aug. 18th; N. M. Watt, Aug. 22nd; D. Davis, Mrs. M. L. Niven, Aug 28th; E. A. Cooke, Aug. 30th; Mrs. C. A. G. Townshend, Aug. 31st; Mrs. I. H. Creighton, R. Mahony (actg. Dep. Adm.), V. Carr-Owen (actg. Dep. Adm), Sept. 1st; E. A. Gardner, Sept. 11th; E. M. Renny-Tailyour (actg. Dep. Adm.), Sept. 12th; E. M. Hunter, E. V. Robinson, M. A. Houghton (actg. Dep. Adm.), Sept. 13th; C. Horsey, Sept. 14th; Y Jennings, Sept. 17th; M. M. Collings, Sept. 18th; O. B. Wilson, Sept. 22nd; J. O. Crofton, Sept. 24th; M. E. Clarke (actg. Adm.), Sept. 25th; A. M. Taylor, Sept. 29th.

The following officers relinquish their appts. on completion of service:—Asst. Cmdts.—Mrs. L. M. K. Pratt-Bralow (actg. Dep Commdt.), Sept. 21st; M. A. Thompson, Oct. 1st.

Administrators.—A. J. Cummins, Mrs. A. T. Cooper (D.A.C.), Sept. 1st; Mrs. E. B. Turtle, Sept. 5th; E. L. Lees, Sept. 18th; U. Campbell, Sept. 23rd.

Dep. Administrators.—Mrs. V. MacDonell, Sept. 1st; I. Storey, Sept. 9th; F. L. Gauntlett (actg. Adm.), Sept. 12th; V. C. Guy, Sept. 15th; D. E. Mellor, Sept. 21st.

Asst. Administrators.—D. F. Bulteel, Aug 31st; G. E. Newman (actg. Dep. Adm.), Sept. 1st; Mrs. E. M. Fuller (actg. Deps. Adm.), Sept. 2nd; C. M. Oakley-Hill, Sept. 3rd; M. V. Jones (actg. Dep. Adm.), Sept. 4th; F. K. Rolland, A. F Valentine, E. T. Smith, Sept. 8th; P Brander (actg. Dep. Adm.), Sept. 12th; D. E. Westbrook, Sept. 15th; Mrs. F. K Pearson, M. A. Payne, Sept 16th; M Willis, Sept. 17th; D Humphrey-Smith, Sept. 18th; E. M. Morrison (actg Dep. Adm.), Sept. 19th; M. K. Cottle, A. M Gilchrist, M C. I. Rees, M. A Tate, A. R. Kiln, Sept. 20th; B. G Anson (actg Dep. Adm.), Sept. 21st; M. S. Boal, Sept 22nd; E. C. Edwards (actg. Dep. Adm.) D. G. Radcliffe, E. M. Walker, Sept. 23rd; V V. Baggage, M. B Kenwrick, Sept. 24th; S. D. Solly, Sept. 26th; B. E. Leefe, Sept. 27th; E. M. Crawford, Oct. 2nd.

Memoranda.—Temp. Hon. Lt. (Hon. Capt.) W. S. Kellar relinquishes his commn. on ceasing to be empld, Aug. 20th.

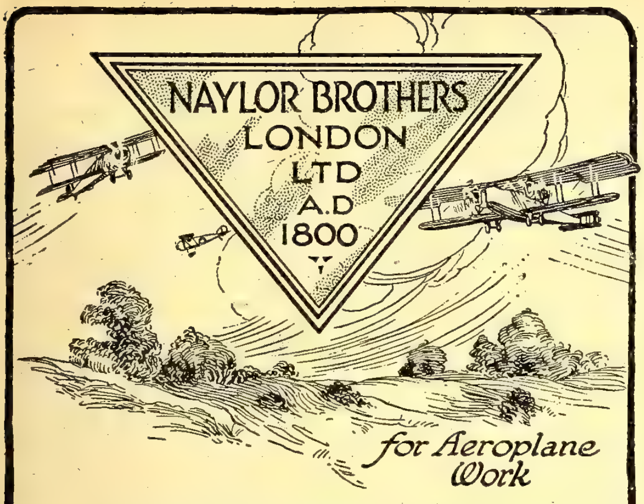
Air Ministry, Oct. 14th.

R.A.F.—The following temporary appointments are made:—Air Commodore.—Air Commodore R. M. Groves, C.B., D.S.O., A.F.C., from Director, Sept. 8th.

Staff Officer (1st Class).—(Air).—Wing Comdr. K. G. Brooke, C.M.G., from S.O.1 at the Air Ministry, Oct. 8th.

Staff Officers (2nd Class).—(P.).—Sqdn. Ldr. A. G. R. Garrod, D.F.C., M.C., Oct. 6th. (Air.)—Sqdn Ldr. R M. Field, Oct. 7th.

Flying Branch.—Lt. A. A. Leitch is graded for purposes of pay and allowances as Capt. whilst empld. as Capt. (A.), May 27th.



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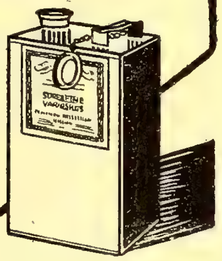

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The following Flying Officers relinquish the grading for pay and allowances as Flt. Lts. on ceasing to be empld. as Flt. Lts. (A.):—H. G. W. Debenham, Aug. 28th; C. T. Black, Sept. 5th.

The following Flying Officers (actg. Flt. Lts.) relinquish actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lts. (A.):—A. D. K. Perkins, Sept. 5th; N. C. Buckton, Sept. 10th.

Sec. Lts. to be Lts.:—J. Duncanson, April 2nd, 1918; J. H. L. Newby, July 12th, 1918; J. S. Maguire, Sept. 26th, 1918; R. J. Hook, Nov. 30th, 1918; C. A. Stubings, Dec. 27th, 1918; W. Barlow, Jan. 1st; C. S. Goode, July 7th; F. G. A. Terrill, July 21st.

Pilot Officers to be Flying Officers:—J. S. Hunt, Sept. 3rd; W. H. Dunton, A. T. Robson, Oct. 1st.

Sec. Lt. L. J. W. Ingram (late Gen List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (O.), June 23rd, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. J. H. Solomon, March 7th; Maj. G. Allen (Capt., Conn. Rgrs.), Aug. 11th; Lt. R. S. Mackenzie (Lt., Can. Cav.), Sept. 21st; Lt. C. A. Bridgland, D.F.C. (E. Surr. R.), Sept. 26th; Sec. Lt. C. P. Stromeyer (Lt., R.G.A.), Oct. 7th.

The following are transferred to unempld. list:—Sec. Lt. C. M. Bochmer, Sec. Lt. H. W. Colgan, Sec. Lt. J. A. Connolly, Sec. Lt. L. E Edwards, Sec. Lt. F. T. Hall, Sec. Lt. W. W. Hough, Sec. Lt. J. H. Johnston, Sec. Lt. C. F. Joyner, Sec. Lt M. K. Knudston, Sec. Lt. J. A. Lane, Sec. Lt. A. R. Lavell, Sec. Lt. H. J. O'Brien, Sec. Lt. M. G. Sample, Sec Lt. A. Stirling, Sec. Lt. W. R. Usher, Sec. Lt. R. L. Walker, Sec. Lt. J. C. Woodward, Sec. Lt. O. J. Walsh, Feb. 1st; Lt. R. L. Hollingsworth, Feb. 15th; Sec Lt. F. W. Elliott, Sec. Lt. H. Harris, Feb. 28th; Lt. A. D. Pope, Sec Lt. H. H. Whitlock, Feb. 29th; Sec. Lt. G. S. Black, March 1st; Sec. Lt. R. W. Heine, Lt. K. R. Napier, M.C., Lt. W. McK. Thomson, M.C., D.F.C., March 6th; Sec. Lt. D. H. Tachauer, March 15th; Lt. E. P. Larrabee, March 25th; Lt. D. W. Lane, April 1st; Lt. J. H. Lowson, April 6th; Lt. H. H. Senior, April 10th (substituted for notification in "Gazette," May 9th); Capt. R. K. Slater, April 15th; Lt. J. S. Hewson, Sec. Lt S. H. Wheatley (substituted for notification in "Gazette," May 9th), April 17th; Capt. G. C. C. Kilburn, Sec. Lt. R J. Smither, April 20th; Lt. W. S. Stephenson, M.C., D.F.C., April 28th; Sec. Lt P. S. Manley, Lt. E. J. Lussier, D.F.C., Sec. Lt. R. J. Whitaker, May 1st; Capt. D. A. H. Nelles, D.S.C., May 11th; Lt. G. C Atkins, May 19th; Lt. E. King, May 20th; Sec. Lt. A. Turner, May 22nd; Sec. Lt W. G. Minnes, June 1st; Sec. Lt. C. H. Living, June 12th; Sec. Lt. L. H. Jones, June 16th; Sec. Lt. C. C. Kruger, June 17th; Sec. Lt. J Tough, June 22nd; Sec. Lt. I. Kleinot, July 10th; Lt. R. C. Hardie, Sec. Lt. W. C. Kinnisten, July 12th; Sec. Lt. J. A. Murray (substituted for notification in "Gazette," April 1st), Lt. A E. N. Ashford, July 24th; Lt. A. F. Bartlett, D.F.C., Aug. 2nd; Lt. H. V. Jones, Aug. 3rd; Capt. J. Clisdal, M.C., Aug. 9th; Sec. Lt. C. E. Moore, Aug. 10th; Lt. E. B. Keele, Aug. 16th; Lt. R. Trattles, Aug. 17th; Sec. Lt W. N. Keeling, Aug. 20th; Capt. D. B. Calderwood, Aug. 27th; Sec. Lt L. Kane, Sec. Lt. R. M. MacDonald, Sec. Lt. A. D. Rolfe, Aug. 29th; Lt. W. N. Cumming, Aug. 31st; Lt. N. C. Denison, Sec. Lt. F. L. W. Dowling, Sept. 1st; Sec. Lt. I. S. Woodhouse, Sept. 2nd; Lt. A. Cairnduff, Sec. Lt. V. N Dickinson, Sec. Lt. H. M. Whittle, Sec. Lt. D. R. Wood, Sept. 4th; Sec. Lt. W. M. Doyle, Sept. 5th; Lt. L. L. Carter, Lt. J. S. J. Craigen, Sept. 6th; Sec. Lt. H. V. Perrin, Sept. 7th; Lt. G. F. Court, Lt. R G. Shaw, D.F.C., Sept. 8th; Sec. Lt. S. S Kirston, Lt. J. L. McAdam, Sept. 9th; Sec. Lt. C. H. A. Farnan, Sec. Lt. A. C. Kennedy, Sec. Lt. J. K. Reid, Sec. Lt. H. R. W. Steele, Sept. 10th; Lt. W. T. Crombie, Sec. Lt. A. R. De Villiers-Van-Os, Sept. 11th; Sec Lt. T. C. Thomson, Sept. 12th; Sec. Lt. R. J. Moyse, Sept. 14th; Lt. F S. Fisher, Sec. Lt. J. R. Kellett, Sept. 15th; Sec. Lt. P. E. Thomas, Sept. 16th; Lt. (Hon. Capt.) A. H. Harrison, Lt. C. W. McK. Thompson, Sept. 17th; Sec. Lt. M. Goddard, Sec. Lt H. Hall, Sec. Lt. C. 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Maj. A. K. Robertson relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 2nd.

Lt. R. C. Steele relinquishes his commn. on account of ill-health, and is granted rank of Capt., Oct. 7th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. A. Harkin, May 20th (substituted for notification in "Gazette" of Feb. 25th); P. H. Baker (caused through wounds), Oct. 2nd; W. S. Anderson (contracted on active service), R. M. J. Bate (contracted on active service), U. Finch (contracted on active service), C. Gilham (caused by wounds), Oct. 2nd; T. S. Byrn (contracted on active service), J. B. Corcoran (contracted on active service), H. W. Smith (caused by wounds), Oct. 7th; W. Adamson (contracted on active service), W. C. Johnston (caused by wounds), R. G. Lye (caused by wounds), Oct. 8th.

Sec. Lt. (Hon. Lt.) E. G. Pernet relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain the rank of Lt., Oct. 7th.

J. F. Stallard (Lt., D. of Corn. L.I.) resigns his commn., Oct. 15th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—R. H. B. Greenyer (caused by wounds), Oct. 2nd; G. F. Smith, Oct. 3rd.

Sec. Lt. M. A. Watts is ante-dated in his appointment as Sec. Lt. (A.), June 5th, 1918.

The Christian names of Sec. Lt. Leslie Hagger Kemp are as now described, and not Leslie Kemp, as stated in "Gazette" of Sept. 13th, 1918.

The notification in "Gazette" of Sept. 16th concerning P.F.O. L. H. Kemp is cancelled.

The notification in "Gazette" of Nov. 29th, 1918, concernnig Sec. Lt. R. Boyle is cancelled.

The notification in "Gazette" of April 1st concerning Sec. Lt. R. Lane is cancelled.

The notification in "Gazette" of May 13th concerning Lt. L. Patterson, M.C., is cancelled.

The notification in "Gazette" of July 29th concerning Sec. Lt. G. V. Straker is cancelled. Notification in "Gazette" of July 18th stands.

The notification in "Gazettes" of July 8th and Aug. 22nd concerning Sec. Lt. M. A. Watts is cancelled.

The notification in "Gazette" of Sept. 9th concerning Flying Officer E. V. J. Fenelon is cancelled.

The notification in "Gazette" of Sept. 26th concerning Lt. A. E. N. Ashford is cancelled.

Administrative Branch.—Capt. (Hon. Maj.) A. F. Morris is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., July 12th.

Flt. Lt. C. S. McNab to be Flt. Lt., from (S.O.), Sept. 20th.

Flying Officer S. G. K. Rapley relinquishes his grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Sept. 13th.

Lt. (Hon. Capt.) H. G. Whyte to be Lt. (Hon. Capt.), from unempld. list, Aug. 9th, with precedence next below Lt. E. King.

Flying Officer J. V. Ould to be Flying Officer, from (A.), Sept. 18th.

The following Flying Officers (S.O.) to be Flying Officers:—C. E. Crowne, J. H. Evans, Sept. 20th.

Sec. Lts. to be Lts.:—T. C. Noble, April 2nd, 1918; F. J. Deane, April 21st; D. D. Carcary, Aug. 7th.

Sec. Lt. R. P. Briscoe is graded for purposes of pay and allowances as Lt. whilst empld. as Lt., May 1st.

Pilot Officer O V. Lee to be Pilot Officer, from (A. and S.), Sept. 8th.

Pilot Officer H. C. McKinley to be Pilot Officer, from (O.), Sept. 26th.

Sec. Lt. R. R. W. Millward (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., June 11th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. A. V. Faulks, June 16th; Capt. J. B. Morgan, Aug. 9th; Maj. C. V. Beresford (Maj., Worc. R.), Sept. 1st; Lt. R. R. Money (Lt., E. Yorks R.), Sept. 20th; Capt. F. Tuttie, D.C.M. (Qrmr. and Capt., R. Berks. R.), Sept. 25th.

Sec. Lt. S. D. Harrower (Sec. Lt., Bedfordshire R.), Sept. 27th.

Capt. D. C. L. Speed, O.B.E. (Capt., King's Royal Rifle Corps), Sept. 27th.

The following are transferred to unempld. list:—Sec. Lt. A. H. Black, Feb. 17th; Sec. Lt. J. B. Russell, D.F.C., Feb. 24th; Lt. H. Brooks (substituted for notification in "Gazette" of July 18th), Lt. H. F. Cochran (substituted for notification in "Gazette" of June 20th), May 31st; Lt. (Hon. Capt.) H. G Whyte, June 4th; Sec. Lt. H. P. Jeppe, June 10th; Lt. C. W. L. Calvert, June 11th; Sec. Lt. F. E. Ross, June 22nd; Sec. Lt. W. A. Keeler, July 12th; Lt. H. R. M. Dodd, July 26th; Sec. Lt. R. Betts, Aug. 27th; Sec. Lt. T. B. Dick, Aug. 31st; Sec. Lt. J. H. L. Dickin, Sec. Lt. R. G. Smith, Sept. 2nd; Sec. Lt. R. A. C. Craddock-Hartopp, Sept. 5th; Sec. Lt. A. G. Chapman, Sept. 8th; Sec. Lt. N. Critchley, Sec. Lt. (Hon. Lt.) T. Mumford, Lt. (Hon. Capt.) F. W. Napper, Sept. 9th; Lt. J. F. V. Rider, Sept. 10th; Lt. E. St. H. Davies, Sept. 12th; Lt. H. F. Hendry, Sept. 13th (substituted for notification in "Gazette" of Sept. 23rd); Sec. Lt. H. H. Price, Sept. 17th; Sec. Lt. (Hon. Lt.) R. D. Thomas, Sept. 18th; Lt. A. E. P. Smith, Sept. 19th; Capt. F. Steel, O.B.E., Sept. 21st; Lt. E. Emley, Sec. Lt. E. J. Jordan, Lt. G. S. Lee, Sec. Lt. C H. Phillips, Capt. (Hon. Maj.) G. N. F. Powell, Lt. H. C. Vickery, Sec. Lt. W. G. Wheatland, Sept. 23rd; Lt. G. Thomson, Sec. Lt. W. B Young, Sept. 24th; Lt. H. R. Little, Sept. 25th; Lt. F. S. Fooks, M.C., Oct. 1st; Lt. A. Waterworth, Oct. 2nd; Sec. Lt. (actg. Maj.) A. R. Fulton, M.B.E., Oct. 10th; Lt. W H. Goodbrand, Oct. 13th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—W. B. W. Clarke (contracted on active service), H. H. Wade (caused by wounds), Oct. 2nd.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. Skinner, Sept. 28th; L. G. Davies, Oct. 3rd; J. W Rimmer, Oct. 4th (contracted on active service); C. A. Seymour, Oct. 9th.

The notification in the "Gazette" of Oct. 7th concerning Sec. Lt. J Skinner is cancelled.

The notification in the "Gazette" of Aug 22nd concerning Lt. (Hon. Capt.) H. G. White is cancelled.

The notification in the "Gazette" of Dec. 24th, 1918, concerning Sec. Lt. R. Boyle is cancelled.

Technical Branch.—Sec. Lt. (actg. Capt.) J. W. Tattersall to be actg. Maj. whilst empld. as Maj., Grade (A.), June 10th.

Capt. (Hon. Maj.) H. R. P. Reynolds is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A.), from (Ad.), from Dec. 7th, 1918, to June 5th.

Capt. E. Rivers-Smith, M.B.E., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (B.), May 14th.

Flt. Lt. W. E. L. Seward, M.C., relinquishes the grading for purposes of pay and allowances as Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., Grade (A.), Aug. 20th.

To be actg. Capts. whilst empld. as Capts., Grade (A.):—Lt. S. J. Gardiner, Sec. Lt. P. S. Riach, June 10th.

Lt. L. R. Staddon is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A.), April 1st.

Lt. P. A. Wright is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (B.), from (Ad.), May 14th.

Flying Officer A. W. H. Phillips relinquishes the grading for purposes of pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (A.), Sept. 17th.

Flying Officer E. S. Cohen to be Flying Officer, Grade (B.), from Grade (A.), and relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (A.), Sept. 8th.

Flying Officer (actg. Flt. Lt.) H. G. Wood relinquishes the actg. rank of Flt. Lt on ceasing to be empld. as Flt. Lt., Grade (B.), Sept. 18th.

Lt. F. H. Isitt to be Lt., Grade (B.), from (Ad.), June 10th.

Lt. E. W. Lawrence is graded for pay and allowances as Lt. whilst empld. as Lt., Grade (B.), Nov. 12th.

(To be continued.)

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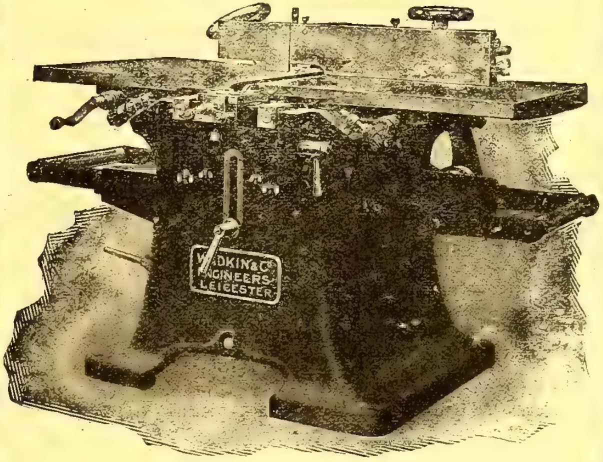

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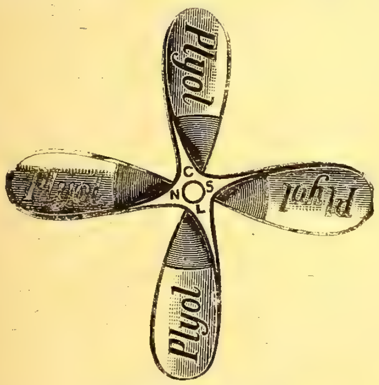

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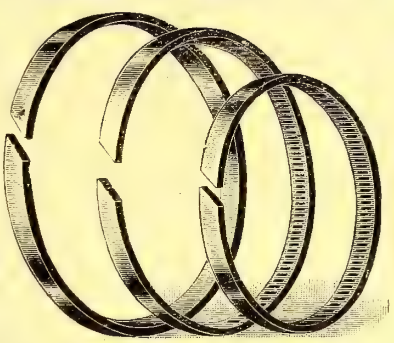

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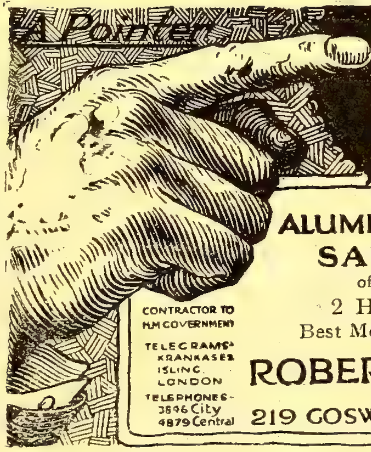

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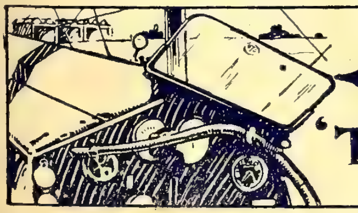

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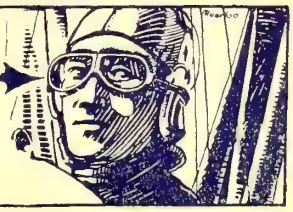

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ON THE FLYING SERVICES, THE AIRCRAFT INDUSTRY AND GRAFT.

To those who have followed during the war the continual agitation in this paper for better aeroplanes and engines for the Flying Services, the recent attack in the daily Press against the Air Ministry on the score of extravagance must seem very amusing. Or, at any rate, they would be amusing if they were not so irritating.

That excellent journal the "Morning Post" seems to be the leader in these attacks, which apparently have for their object the abolition of the Air Ministry. One is far from being out of sympathy with that object, for, though one is prepared to admit that an Air Ministry may be a useful thing to have about the national house, one cannot convince oneself that it is anything in the nature of a necessity even as a Civil Department, and it is still less a necessity as a Naval or Military Department.

All the work that it could possibly do as a Civil Department could be done as well—it could not be done worse—by a sub-section of the Ministry of Transport, and all its Service work—good as it is—could be done very much better by departments of the Admiralty and War Office. In fact, so far as the Admiralty is concerned, either the Admiralty will be forced in the near future to take over the Naval side of the R.A.F., or else the R.A.F. will have to take over the Navy, for recent events coming right on top of the experience of war have demonstrated that the Navy, as at present existing, is superfluous, and that Lord Fisher's explosive dictum "Sack the lot!" may be applied by the nation to the whole Navy apart from that portion concerned with aircraft.

CHARGES ANCIENT AND MODERN.

Before expatiating further on the superfluity of the Navy, one would like to say a few more words concerning the before-mentioned attacks on the Air Ministry.

Those who have read this paper during the war will recognise all the charges now brought against the Air Ministry as old friends. They are precisely the same as those which were brought up at the Air Inquiry into the maladministration of the R.F.C. in 1916. And they are precisely the same as those into which the Admiralty refused to permit inquiry at the same period. Therefore they are not in fact charges which ought to be brought against the Air Ministry at all. They ought to be brought retrospectively against the Admiralty and War Office.

The only novelty about the charges is that since the Armistice contractors for aircraft supplies have been allowed to continue their output unchecked until Peace was definitely declared. As the Armistice came after the Admiralty and War Office ceased to handle aeroplane supplies, naturally the Air Ministry is the department at which most of these charges are levelled. But those who make the charges find it convenient to forget that the Admiralty continued to build airships and their appurtenances long after most of the aeroplane contracts had been cancelled, and that the final cuts in aeroplane and airship contracts came almost simultaneously.

Also the critics forget conveniently that an Armistice is not a Peace, and that though in time of Peace a Government of politicians who are not statesmen may not prepare for war, during an Armistice it is the duty of the War Departments to prepare for a renewal of war. Consequently it would have been criminal to cancel contracts for new and improved machines until Peace was definitely declared.

THE ROOT CAUSE.

As to excessive deliveries of obsolete machines which were burned as soon as delivered, that is merely a new phase of the old charges brought by this paper against the administration of the R.F.C. in 1915, when quantities of B.E.2cs were being delivered by firms which ought to have been delivering newer and better types of machines. The difference is that after the Armistice the obsolete machines were burned by our own people on the ground, whereas before the Armistice, or at any rate up to the end of 1917 (when the R.F.C. won the Command of the Air), they were sent over the lines where they were shot down and burned, generally along with their crews, by the enemy.

That was in the days when wild enthusiasts charged the R.F.C. authorities with murdering our aviators—charges which apparently amused the said authorities considerably, judging by their attitude at the Air Inquiry.

These murders raised a little interest in the Press, but the financial effect of the delivery of obsolete machines to be burnt with their crews on the enemy's side of the lines was so much less than that of burning more recently obsolete machines ourselves without their crews that no serious agitation was raised. It was not until politicians in and out of the Services saw an opportunity for self-advancement in the formation of an Air Ministry that the imbecility of forming a separate Service with a separate Ministry was considered. And then all the old charges of 1916, together with their sequels in 1917, were raked up to form the Air Ministry in 1918.

That imbecile Act ought to have ruined the Flying Services completely, and it would certainly have done so but for the splendid work done in 1917 by General Trenchard in building up the moral of the R.F.C. and in 1918 by Generals John and William Salmond in sustaining that moral under almost impossible circumstances.

How the relics of the R.N.A.S. held together is a mystery. They seem to have clung onto the Naval tradition. and to have rallied in little groups round their squadron and wing commanders. Certainly they had no support from their senior Naval officers, who were very much too busy scrambling for good jobs at the House of Bolo to bother about what became of the wretched R.N.A.S. seaplane people And it was very largely this betrayal of the R.N.A.S. by their Naval officers which gave the Germans the command of the air over the North Sea just when the R.A.F. held absolute command over the war areas on land.

CHARGES FALSE AND TRUE.

Now we have the same old superfluity of obsolete machines raked up again for the destruction of the very Air Ministry which an earlier similar superfluity was used to create. But this time we find a difference in the argument.

Then the superfluity was attributed to lack of co-ordination and co-operation between two rival Services. Now it is said, by the "Morning Post," "The charge is that the Air Board subordinated the requirements of the fighting men to the interests of the contractors; and, further, that the same system was continued and carried to incredible lengths by the Air Ministry."

If that sentence means anything it means that the Supply Department and the Technical Department under both the Air Board and its successor the Air Ministry were bribed, or otherwise influenced, to go on ordering obsolete machines so as to save the contractors the expense or at any rate the loss of profit which would be caused by changing over from an old to a new type of machine.

THE S.B.A.C. AND GRAFT.

In any case it is a direct charge of graft against British aircraft constructors, and that being so it is the duty of the Society of British Aircraft Constructors to clear the good name of the British Aircraft Industry by demanding an official inquiry into this charge.

So far as those firms which are known as "designing firms" are concerned, one knows that the charge is grossly false. But there may have been "designing" firms, in another sense, of whom the charge is true.

The "designing firms" are those who have maintained a designing staff and who have produced from time to time new types of machines (or engines), which types have been later reproduced in quantities by firms not strictly in the Aircraft Industry at all, but merely manufacturing firms of one sort or another which were dragged in to build aircraft. These designing firms have in fact been the chief sufferers from the foolishness or knavery, whichever it may have been, of the Supply and Technical Departments.

If there has been graft in order to prolong the output of obsolete machines it has certainly not come from the designing firms, who, if they indulged in graft at all, would do so in order to get their newest and best designs accepted.

FOOLS OR KNAVES?

One knows enough about the way in which new designs have been held up by the Air Board and Air Ministry to know that the superfluity of obsolete machines has been caused chiefly by the refusal of the Technical and/or Supply Departments to adopt new types which were offered to them. The people who turned down or delayed the new types were either fools or knaves, and it is the duty of the S.B.A.C. to demand an inquiry to prove which they were.

Were they fools or knaves who continued the B.E.2c and its successors the 2d and 2e in production in 1916 and 1917; and who turned down the Sopwith "one-and-a-half-strutter" in the summer of 1915? It was ordered by the French in December, 1915, and yet only one R.F.C. squadron of it was in action on the Somme in September, 1916.

Were they fools or knaves who turned down the Bristol monoplane in the Summer of 1916 and eventually ordered a few which were used in the Balkans (of all places) in 1918?

Were they fools or knaves who turned down the Martinsyde biplane early in 1917, when it was 20 miles an hour faster than anything in the air, and ordered it in quantities *after the Armistice?*

Were they fools or knaves who turned down the "Bantam" B.A.T. late in 1917, when it was miles an hour faster than the Fokker biplane or triplane and twice as strong and manœuvrable? And how did they justify their statement that they could not stand behind ply-wood for fuselages, in view of the fact that the Germans used little else, and that no B.A.T. fuselage ever gave trouble.

Were they fools or knaves who turned down the twin-engined Dyott and the twin Fairey fighter, and the twin Avro "Pike," each in its day better than any contemporary twin-engined machines?

Were they fools or knaves who washed out the whole programme for fast fighting seaplanes in 1917 and left the Germans the command of the air over the North Sea in 1918?

Were they fools or knaves who neglected the torpedo-dropping aeroplane, which proved its worth in the Dardanelles in the Spring of 1915, and ordered enough *after the Armistice* to destroy a British Fleet in theory with dummy torpedoes in 1919? And how do they justify the escape of the "Goeben" in 1918?

Were they fools or knaves who continually held up new types or changes of types in the de Havilland machines? Which were they who turned down the D.H.1 and D.H.1a, but ordered F.E.2s by the thousand, though inferior in design and performance? Which were they who stopped progress with the D.H.3 in 1915 and revived almost the identical machine in 1918 when it was called the D.H.10?

One could go on almost for ever with similar examples of obstruction, attributable only to foolishness or knavery, and all tending to produce a superfluity of obsolete types. Yet in every case, so far from this action being in the interests of the contractors, it has been directly against their interests. If there has been any undue influence at work on their side it has been in the direction of inducing the authorities to adopt new types.

One knows cases in which normally honest men have gone about trying hard to discover which official could be induced to give a new design or a new idea a fair practical trial instead of turning it down on purely theoretical grounds. If, therefore, there is any charge of graft against the "designing firms," their failure to induce the officials of the Supply and Technical Departments to adopt the newest and best designs seems to provide the best possible evidence of their failure as grafters.

There is, however, another side to the question, and that is whether big firms engaged on producing parts or complete machines of an obsolete type have by one form of graft or another induced the Supply and/or Technical officials to turn down new and improved designs so that they might be allowed to continue their profiteering career undisturbed by changes of patterns, tools, jigs, and so forth. This side of the question might be worth investigating, and as the great majority of the firms who made aircraft or any part thereof during the war are members of the S.B.A.C., it is that Society's duty in their interest, as well as in the interests of the designing firms, to demand an official inquiry into these charges of graft.

One has heard very curious stories of graft among minor firms and minor officials, but one believes that most of the trouble in the bigger matters, such as turning down good machines and engines, has been due to sheer foolishness, especially to that worst of all kinds of foolishness the high and mighty superiority of the scientific theorist over the practical man who merely makes an aeroplane which flies.

This kind of foolishness, as it afflicted the Royal Aircraft Factory (now known as the Royal Aircraft Establishment), and as it still afflicts the kindred affair, the National Physical Laboratory, was probably responsible for more deaths over the lines than was any form of graft.

And, so far as graft is concerned, one believes that the overweening ambition of a few official scientists (so-called) to have their own theories (and so their own supposed abilities) recognised by some official reward or decoration has been responsible for the turning down of more good and new designs than has any other form of graft. For this is a form of graft in that the official scientist or technical official uses his official position, and his consequent social position, to turn down a rival design or scheme and to push his own interests to his ultimate advantage.

On the whole, therefore, one believes that the Aircraft Industry proper has been fairly free from graft. But none the less the charge made in the "Morning Post" is so direct that the S.B.A.C. cannot afford to ignore it. The fact that the charge is made as an attack on the Air Ministry and not on the Aircraft Industry matters but little. The fact that "any stick is good enough to beat a dog with" does not prevent the stick from being made dirty in the process, and it is up to the S.B.A.C. to clean the dirt off the Aircraft Industry in this matter.

Lack of space prevents one to-day from dealing with the effect of the attack on the Air Ministry itself, for after all that is a minor matter, in that any change which is to take place is not likely to happen for a few weeks, whereas the charge against the honesty of the Aircraft Industry is one which affects its international credit immediately. Therefore one proposes to postpone till next week the argument concerning the superfluity of the Air Ministry, or, alternately, of the Royal Navy.—C. G. G.

THE BRITISH AERO SHOW OF 1920.

As the following notice indicates, the S.B A.C. has decided to hold an Aero Show at Olympia, Hammersmith Road, in July of 1920. Apparently the idea in fixing this remote date is that the show shall not be held until everybody in the Aircraft Industry has had an opportunity of producing an aeroplane which is not merely a modified war machine. There does not seem to be any grounds for imagining that the S.B.A.C. is postponing the holding of the show for the purpose of giving every other nation an opportunity of designing and exhibiting new machines and thus securing any possible orders.

One suggests that as it has been decided to hold the show at such a curious date as the one chosen it might have been well to hold it not in London itself but at some more or less accessible aerodrome where it would be possible for exhibitors to have machines flying as well as those which appear on the stands. This notion has possibly something to commend it, on the assumption that the S.B A.C. does not desire a mere common mob to attend the exhibition, but is solely concerned with attracting millionaires and bankrupts, who appear to be in these days the only people who have any money to spend. One assumes, of course, that it is not the mere vulgar object of the S.B.A.C. to make the show pay for itself as a gate-money concern, as is the custom in the motor trade, for if machines are to be shown adequately at Olympia there will be no room for the public.

If it had been the intention to make the show pay, it would have been obviously more sensible to have held it somewhere in the immediate vicinity of London, either in marquees in Hyde Park, or at a repaired White City, or at Earls Court, or possibly even at the Crystal Palace, which is now considerably more accessible even than the aerodromes at Hendon or Cricklewood. In the event of any visitor to the exhibition having any desire to fly in a duplicate of any of the machines exhibited, it would have been quite possible to convey such a curious person to an aerodrome in an automobile.

It is possible, however, that the special providence which looks after the interests of England may turn the apparent eccentricity of the S.B.A.C. to good purpose in that by next July either the people who have bought the immature commercial machines exhibited at earlier exhibitions abroad may have seen the error of their ways and may be more disposed to buy British machines, or perhaps, by an even kindlier act of fate, there may be another war by July, in which case of course aircraft will be in very great demand.

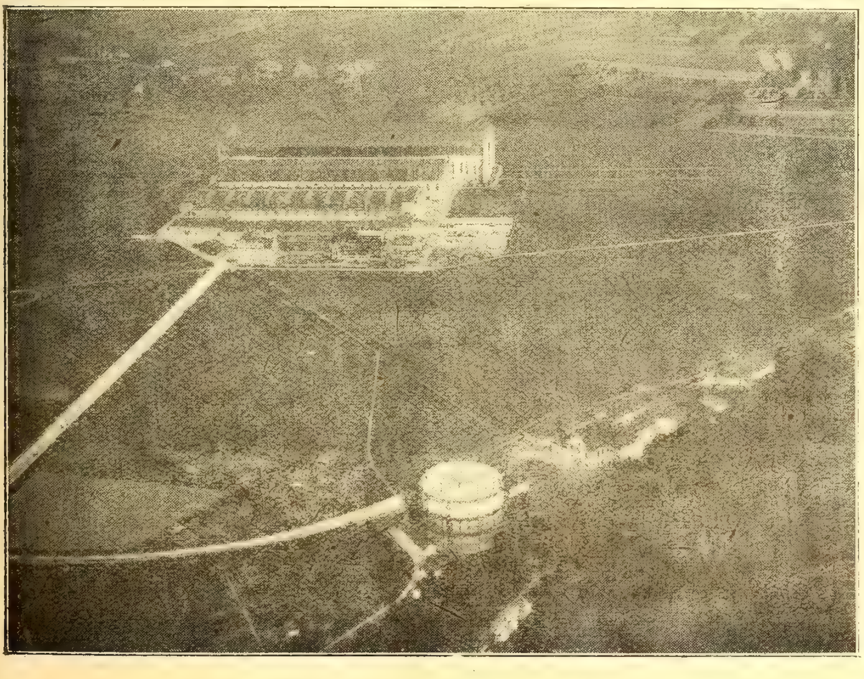
The S.B.A.C. communiqué reads as follows:—

Arrangements have now been made to hold an important International Aero Exhibition at Olympia in July next. It promises to be the largest and most comprehensive display of aircraft, aircraft engines and their components that has ever been brought together, and should be of particular interest, as it will be possible to show something of the post-war developments in Aeronautics. Every type of machine for every variety of purpose will be represented, and, in conjunction with the indoor Exhibition, it is hoped to be able to make provision for trials and demonstration flights at an aerodrome within easy distance.

Before the war a successful series of aero exhibitions was held by the Society of Motor Manufacturers and Traders at Olympia, the first being held so long ago as 1909. Owing to the growth of the British Aircraft Industry during the war, the aircraft firms have formed a separate body, the Society of British Aircraft Constructors, which comprises in its membership practically every British manufacturer of aircraft, aircraft engines and their component parts, accessories and materials, and this body has entered into an agreement with the Society of Motor Manufacturers and Traders under which the pre-war aero exhibitions will be continued under the joint management of the two societies.

The arrangements provide for the setting up of a joint committee to promote aero exhibitions in the United Kingdom and the use of the exhibition organisation maintained by the Society of Motor Manufacturers for the carrying out of its annual motor and other exhibitions.

The Exhibition offices are at 83, Pall Mall, S.W.1.



The first aerial photograph published since the war of the great Zeppelin Factory at Friedrichshafen, on Lake Constance. The enormous size of the "Airship Halls" may be judged by the size of the ordinary workshops and houses in the vicinity. With usual German enterprise, these works, which turned out the majority of Germany's rigid airships during the war, have been converted to peaceful pursuits, and the first of their peace products, the commercial airship, "Bodensee," built for the Hamburg-Amerika Steamship Company, made her first appearance a few weeks ago.

JOHN PORTE, 1884-1919.

British Aviation has suffered a great loss by the death of Colonel John Cyril Porte, who died suddenly on Wednesday, October 22nd. As was well known, Colonel Porte had been suffering for years from tuberculosis, and his death was due to one of those attacks of hæmorrhage which occurred at intervals.

The history of John Porte is a tragedy relieved by the example of indomitable will and loyalty which he has set to all those who serve the King. Few have suffered more and none have done better work in spite of physical and mental suffering.

A Pioneer of Aviation.

John Porte, like so many of those who have done much to develop Naval aeronautics, was one of the early submarine officers who served under Captain Murray Sueter, the pioneer of submarines, airships, and aeroplanes in the Navy. When stationed with his submarine at Portsmouth, Lieut. Porte, as he then was, constructed, in partnership with a brother officer, a quaint glider with which they experimented on Portsdown Hill in 1909. Thus he is entitled to a place among the pioneers of British aviation.

This glider was peculiar in that it was built for a crew of two, one of whom controlled the vertical steering, or elevators, while the other controlled the lateral path with rudder and wing-warping. The machine was launched from a launching track, more or less in the manner of the Wright aeroplanes, and though it met with disaster early in its career it was a distinctly interesting and intelligent experiment.

THE LATE COLONEL J. C. PORTE, C.M.G., R.A.F.

Shortly after engaging in this work John Porte was invalided out of the Navy with tuberculosis, and left in the Service a high reputation as a capable officer, an able technician, and a skilful navigator. The old hands in the Submarine Service still tell stories of his wonderful work with the primitive A-class boats, especially concerning an extraordinary voyage which he made in a thick fog from the Vickers works at Barrow to Plymouth, rounding the points of the treacherous Welsh and Cornish coasts without sighting land or sun, and navigating entirely by dead-reckoning and his knowledge of tides and currents. It is said that for three days and nights he never left the deck of his little craft.

There is no doubt that the hardships which he endured while on such work as this were the cause of his contracting the disease from which he died. But His Majesty's Navy is not accustomed to take notice of such things, which are all in the day's work, so John Porte was simply invalided out.

A Commercial Venture.

His experiences in the Navy, and his own temperament, a curious mixture of rashness and cool calculating foresight, naturally fitted him for the work of a pioneer aviator. Also it seemed that flying would at any rate alleviate his disease, by keeping him constantly in the open air. Consequently John Porte devoted himself to aviation.

After learning to fly at the Deperdussin School at Betheny early in 1911, he formed the British Deperdussin Company, in which Admiral Fremantle was the Chairman, Mr. Lawrence Santoni (now of the Savoia Company) was a co-director, and Mr. Frederick Koolhoven was chief designer. And on a Deperdussin he was one of the starters in the Circuit of Britain in the Summer of 1911. The first British-built Deperdussin monoplane flown by John Porte put up a very fine performance in the Military Aeroplane Trials of 1912, and would certainly have come near winning the competition but for a defective engine.

Afterwards, when a better engine was fitted, he flew the same machine in various competitions in 1913 at Hendon and proved it to be one of the best aeroplanes of the day. It is of interest to note that this same machine, after lying in store during 1914, was brought out again at the outbreak of war and was taken over by the R.N.A.S.

John Porte flew the machine again, and on one occasion at least used it at night to repel a reported Zeppelin raid. Later it was used as an advanced school machine. Later again it was used by Commander R. M. Groves (now Air Commodore) as a hack, and he flew it all over England and a great deal of France. And finally it was irreparably crashed by another officer somewhere in 1916. One mentions this merely by way of proving John Porte's ability to know a good machine when he saw it.

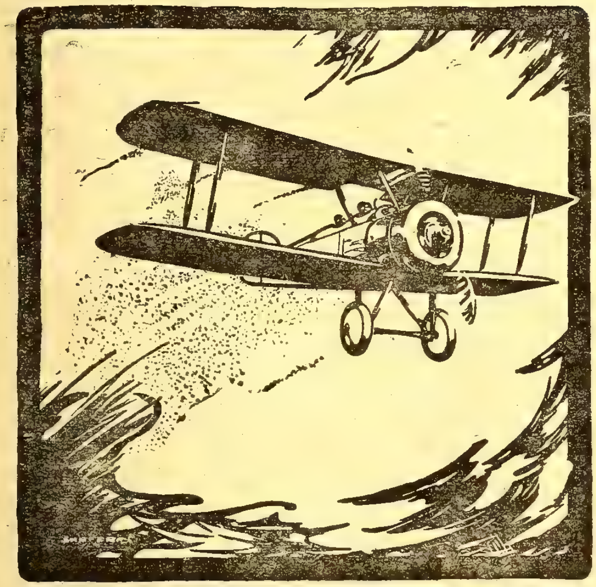
The Beginning of the Big Boats.

Despite the ability of his firm to make good aeroplanes, they failed to find favour with the Government's "experts," so in 1913 the British Deperdussin Company failed to meet its creditors and was put into liquidation. Therefore as there was no opening for his ability in England John Porte went to America, where he joined Mr. Glenn Curtiss in the task of designing and constructing, to the order of Mr. John Wanamaker the millionaire store-keeper, a vast flying-boat on which John Porte was to attempt to fly the Atlantic.

Mr. Curtiss is the first man who ever flew off water and the first who made a flying-boat. It was natural, therefore, that his experience in this direction combined with John Porte's knowledge of the sea and of aviation in general should produce something novel and good. The original Wanamaker-Curtiss was a twin-engined boat, and flew satisfactorily with light loads, but it failed to lift anything approaching a trans-Atlantic load

CIVIL FLYING

WITH



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of fuel. John Porte proceeded to alter the hull design, so as to make it leave the water more easily, and he installed a third engine.

Though the resulting machine still failed to fulfil trans-Atlantic requirements it was nevertheless a great advance on anything achieved up to that time, and it was in fact the progenitor not only of the various multiple-engined Felixstowe boats, culminating with the "Felixstowe Fury," but also of the United States Navy's "N.C." class of flying-boat, one of which was the first craft to cross the Atlantic by air. Thus John Porte can claim not only to have developed the big flying-boats of which we heard so much during the war, but he can claim, along with his friend Glenn Curtiss, to have originated the type. This fact is proved by the agreement made at the time between Glenn Curtiss and John Porte that the latter was to share in any profits which might be derived from the sale of flying-boats of this type.

Back to the Navy.

Some time before the Wanamaker-Curtiss boat had passed the experimentation stage, the war broke out. John Porte, as an invalid, cast by the Navy as of no further use, was fully entitled to remain in the United States and sell aircraft to this country, or to return to England and become a war profiteer. Such action was not in accord with John Porte's nature.

Without staying to make any arrangements about his personal affairs, without even packing an adequate supply of luggage, he caught the first available boat to England, and immediately on arriving reported for duty to his old chief, Captain Murray Sueter, then Director of the Air Department at the Admiralty. Though Their Lordships of the Admiralty may not be willing in time of peace to maintain a man who is slowly dying of disease contracted while doing the Navy's work, they are ever willing to accept his help in time of trouble, so John Porte was reinstated in the Navy as a Lieutenant-Commander—which would have been his substantive rank had he not been invalided—and was appointed to command as Squadron-Commander the newly formed Naval Air Station at Hendon, and shortly afterwards was promoted Wing-Commander R.N.A.S.

At Hendon his work was to train young civilians to become aviators and to walk in the ways of the Navy. The subsequent careers of those who were trained by him during the early months of the war are the best evidence of his ability as an officer. One need mention no names, but if one were to give a list of the Wing-Commanders and Squadron-Commanders who have done the best work in the R.N.A.S. and Naval section of the R.A.F. it would be found to include an unduly high proportion of John Porte's pupils from Hendon. And it is the distinguishing mark of those who were trained by him that they have maintained throughout their Service careers the highest tradition of the Navy.

During his period of duty at Hendon he took part in the biggest air raid which had taken place up till then, namely that on Bruges, Zeebrugge, and Ostende in February, 1915. As he had to leave his command temporarily to join the raiders one assumes that he did so by way of a change from hard work at home.

The Big Boat Development.

After some months of excellent work at Hendon John Porte was transferred to Felixstowe to take charge of the experimental work. Here he developed the various types of big flying-boats, beginning with the twin-engined "America" type, and working up through experiments with three-engined machines, to the great five-engined "Felixstowe Fury."

Despite his steadily weakening physique he worked like a slave at his designing and constructional work, and invariably flew the boats himself whenever any radical alteration was made in their design or power-plant. And so by a rapid process of evolution the standard-type "F" boats were produced.

Space is lacking in which to record the work done by these boats, which deserve a history of their own. One can only say that they were of the highest value as anti-submarine patrols, and that such was their reliability and radius of action that the boats from the war stations at Felixstowe and Yarmouth regularly patrolled the Dutch and German Coast right into the Helgoland Bight. Others of the type patrolled the Mediterranean from Malta to Taranto, and thence to Greece, Crete, and Egypt. Also the designs of the boats were sent to America and were adopted by the U.S. Navy for their standard type patrol-boats.

The Prosecution.

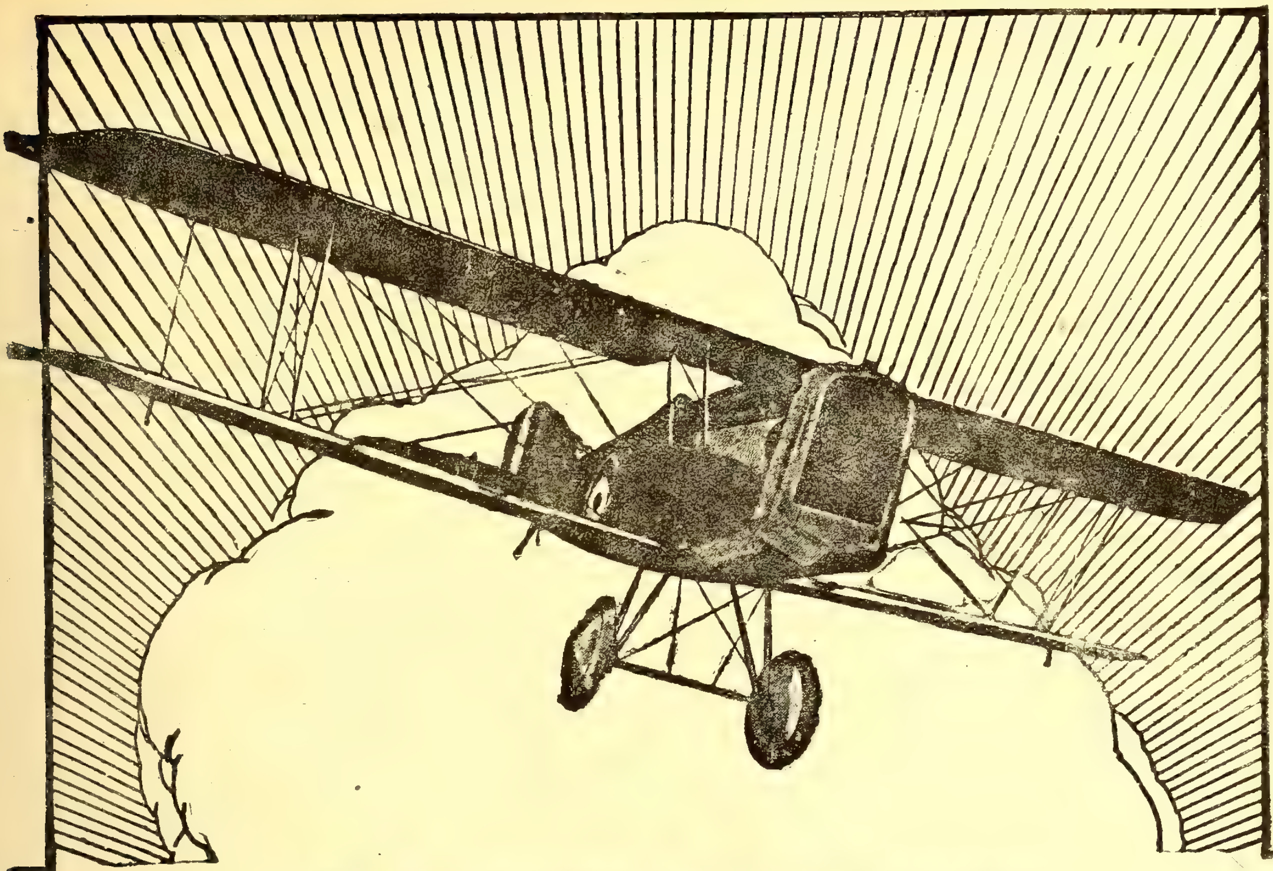
It was while he commanded the experimental station at Felixstowe that the great tragedy of John Porte's life came upon him. He was prosecuted by the Government which he had served so well for receiving illegal commissions on war material. The case was fully reported in this paper and was far too long to recapitulate here, but, to put it as briefly as possible, he was charged with taking commissions from the Curtiss Company on aircraft supplied to the R.N.A.S.

It will be remembered that before the war he had an agreement with Mr. Glenn Curtiss that he should share in the profits on the boats which they had jointly designed, and it was this share which the Law Officers of the Crown chose to regard as illegal. John Porte's chief, Commodore Sueter, gave evidence that so far from having influenced the purchase of Curtiss boats John Porte had in fact advised that the R.N.A.S. should have its flying-boats built in England instead of buying them in America. And it was plainly shown that the money paid by the Curtiss Company to John Porte's legal representative (who was also prosecuted) was due on this pre-war agreement, made while the Navy had no use for him.

The Amazing Sentence.

John Porte, on whom the strain of the charge told heavily, producing attacks of hæmorrhage which at one time in the case nearly caused his death, was far too sick a man to fight to a finish, and his legal representative was too old and also too ill to fight, so they pleaded guilty—by arrangement. The sentence was surely one of the most extraordinary in legal history. John Porte was allowed to go free on condition that he returned to the Treasury some thousands of pounds which had been placed to his bank account, but he was allowed to retain £10,000 which had been settled on his wife. His legal representative was fined a sum exactly equivalent to that which he had received from the Curtiss Company on account of the commission due to John Porte under the pre-war agreement.

How the legal mind arrived at such an agreement is a pure mystery. Assuming that John Porte was guilty—as the Crown claimed—the sentence seems to the layman the exact equivalent of allowing a burglar to go free on condition that he returns the majority of his booty. Assuming that John Porte was innocent—as all his friends believe, and as common sense would seem to indicate—then obviously he should have been allowed to retain the commission which was due to him. And in that case the Nation has appropriated some tens of thousands of pounds which by right belonged to John Porte. Either John Porte should have "done time" or he should have died a rich man. There cannot in justice be any halfway course, whatever there may be in law.



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Among those who know something of what was going on behind the scenes in the R.N.A.S. it is generally believed that the Law Officers of the Crown were induced to bring the case on insufficient initial evidence, and that when what lay behind it was discovered they were willing to compromise. But in order to save the face of Authority the sick man and his aged friend were made to suffer. And the belief among those who know, as aforementioned, is that the charge was raised for the satisfaction of a private enmity, not in reality against John Porte, but in the hope that a higher officer might be dragged into the case and so be disgraced.

The Service View.

Thus do the innocent suffer for their loyalty. How much John Porte's superior officers thought of the verdict may be gathered from the fact that immediately he was released from arrest—as a man who had pleaded guilty to a grave charge, equivalent to embezzling the Nation's money, and had been compelled to disgorge his ill-gotten gains—he was not only reinstated in his command of the experimental station at Felixstowe, but was given command of the war station as well. Shortly afterwards he was made a Companion of the Order of St. Michael and St. George, and was given a step in rank to full Colonel R.A.F., which was the equivalent rank of a Post-Captain R.N.

One could perhaps hardly find a better example of the difference between Justice as understood by the King's Services and Law as administered by civilian officials.

After-War Schemes.

John Porte remained in command at Felixstowe till after the end of the war. Some months ago he resigned from the R.A.F. and devoted himself to the development of certain very big schemes for the construction and operation of flying-boats.

Everything seemed to point to a great success which would recompense him in some measure for his treatment by the Government. He had collected round him a staff of flying-boat specialists whose value he had proved in the Service. He had made arrangements for production at one of the best works in the country. He had secured adequate financial support. And just when all seemed plain sailing he had another attack and died.

His death deprives British aviation of one of its most far-sighted leaders. Only two or three days before his death he did one the honour of unfolding some of his schemes, and if they are now to be forsaken it will be the worse for the future of flying. It is to be hoped that those with whom he was working, and who have his plans in hand, will be enabled to carry them through, for the future good of this country and as a memorial to the great man who originated them.

Ave Atque Vale.

In his own sphere of activity John Porte was a great man. Like so many other brilliant men who have served the King he was the son of an Irish parson, having been born at Bandon, County Cork, in 1884, when his father was vicar of Bandon. He had all the Irish quickness of wit, and that practical and disillusioned mind which is so essentially Irish.

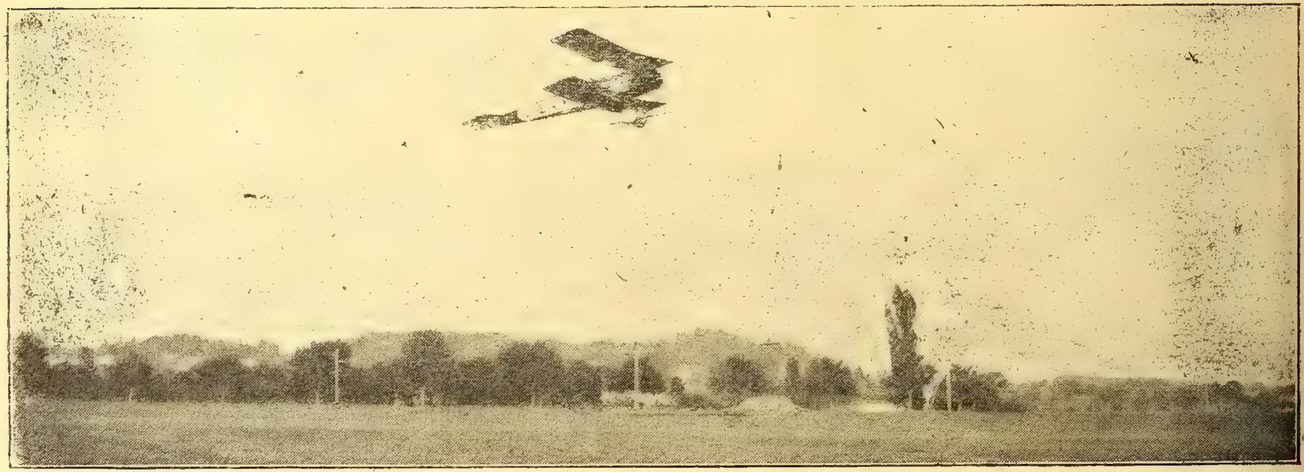
As an officer and a leader of men he showed the highest qualities. Though he could be sufficiently severe when occasion demanded, he had the Heaven-sent quality of attracting and holding the affection of those who served under him. One has yet to find a single officer who was trained by John Porte who does not look on his period of training as one of the happiest and most profitable times in his life. And one knows that all those who served at Felixstowe when he was in command have given to him unqualified devotion.

Of John Porte's own loyalty one has already spoken, but one may now make known that after the prosecution had been launched against him, and while he was in the eyes of our law-givers a putative criminal, ill as he was he took out one of his big boats over the German Ocean and destroyed a German submarine, so that whatever might betide him in the clutches of the law he would have the satisfaction of knowing that his last act as a free man had been against the King's enemies.

Throughout the war John Porte fought death at home so that he might live to fight the King's enemies abroad. He has died after having seen that victory for which he worked so hard, and on the eve of a new fight for the Command of the Air in time of Peace. One can only hope that his unconquerable will and spirit may inspire those on whom descends the duty of carrying on his work.

To his widow and to his father all who knew and admired John Porte will offer their respectful sympathy in the great loss which so many of us share with them.

C. G. G.



BRITISH ENTERPRISE ABROAD.—An Avro Biplane, piloted by Mr. Eric Bradley, flying at Lausanne. It is understood that this is the first British machine which has flown in Switzerland since the war.

The Success of the R.34.

Extract from General Maitland's Log:

MIDNIGHT—

> "*As we lay in our hammocks we listened to the rain beating pitilessly down on the outer cover of our trusty ship of the air, and our feelings, despite the weather, are those of complete confidence and security.*"

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ON THE RIGHT IS THE SPECIAL CIVILIAN 2-SEATER MACHINE.

NAVAL & MILITARY AERONAUTICS

[The "Official Gazette" notices will be found on page 1552.]

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

ST. JAMES'S PALACE, Oct. 22nd.

By command of the King, Lieut.-Col. Prince Arthur of Connaught held an Investiture in the Throne Room, St. James's Palace, at 11.30 o'clock this morning on His Majesty's behalf.

The following were invested with the Insignia of the respective Divisions of the Orders into which they have been admitted:

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Commander.—Military Division.—Wing Comdr. John Halahan, R.A.F. (also received the Air Force Cross).

THE DISTINGUISHED SERVICE ORDER.—Companions.—Lt.-Col. Alexander Adams, R.E., attd. R.A.F. (also received the Insignia of an Officer of the Most Excellent Order of the British Empire, Military Division); Maj. David Stodart, R.A.F. (also received the Distinguished Flying Cross).

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Member.—Military Division.—Capt. Archibald Smart, R.A.F.

His Royal Highness then conferred decorations as follows:—

THE DISTINGUISHED SERVICE CROSS.—Lt. Edward Cooper, R.A.F.

THE DISTINGUISHED FLYING CROSS AND THE AIR FORCE CROSS.—Maj. Lawrence Wackett, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Capt. Edmund Hardman, R.A.F., and Flt. Lt. Frederick Lord, R.A.F.

THE AIR FORCE CROSS.—Sqdn. Ldr. Alan Duguid, R.A.F.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made:—

OCT. 25TH.—Surgn. Lt. (Temp.).—E. R. Peirce, to "Argus" (Oct. 24th).

OCT. 27th.—Payr. Mid.—P. J. A. Moore, to "Argus" (Oct. 25th).

OPERATIONS IN RUSSIA

It was reported on Oct. 22nd that British warships and aeroplanes were persistently bombarding Krasnaya Gorka.

NAVAL REORGANISATION

With regard to the reorganisation of Royal Air Force units operating with the Navy, the following modifications are being made in the home organisation.

All Air Force units working with the Navy, including airships under naval control, will in future be centralised under the command of an Air Force officer, with the title of Air Officer Commanding the Coastal Area (A.O.C.A.), whose offices will be at 4, Thurloe Place, Kensington.

The first occupant of this new post will be Air Commodore Arthur V. Vyvyan, C.B., D.S.O., who for the past six months has been in command of R.A.F. units in the Mediterranean.

The duties of this officer will include the command of all air units in the United Kingdom working with the Navy, with the exception of personnel embarked in ships of His Majesty's Fleet; as adviser to the Lords of the Admiralty in the first instance on all questions appertaining to Naval aerial policy (the Chief of the Air Staff acting as Chief Adviser); and he will also act as adviser to the Naval Commanders-in-Chief at the various home stations. He will be directly responsible to the Air Ministry for the conduct of training, but will keep in close touch with the Admiralty to ensure that the views of the Lords of the Admiralty receive at all times adequate consideration, and he will also be responsible to the Air Ministry on all questions of supply and maintenance of air units working with the Navy in home waters.

The coastal area will be organised into the following administrative groups.

Operational units in home Naval commands, 29th Group, and 10th Group. So far as concerns operational units in the several home Naval commands, these will continue, as heretofore, to work under the orders of the respective Naval Commanders-in-Chief (and thus under the Admiralty) for all operational purposes.

As regards other purposes, they will be under the Air Officer commanding the coastal area. Each Commander-in-Chief will have the senior combatant Royal Air Force officer in his command as his local adviser, but on more important questions of policy he will refer to the Air Officer Commanding the Coastal Area.

The 29th Group will consist of the aircraft embarked on His Majesty's ships and their necessary shore bases and establishments; the organisation of the latter will be based closely upon existing practice. The group commander will have under his command certain bases for supplying the Fleet.

The 10th Group will consist of the Royal Air Force establishments maintained for the training of the Royal Air Force and Naval personnel required by Royal Air Force units or operating with the Navy at home and abroad.

"MEMORIES."

The following passages are taken from the extracts from "Memories" by Admiral of the Fleet Lord Fisher, which has recently been published:—

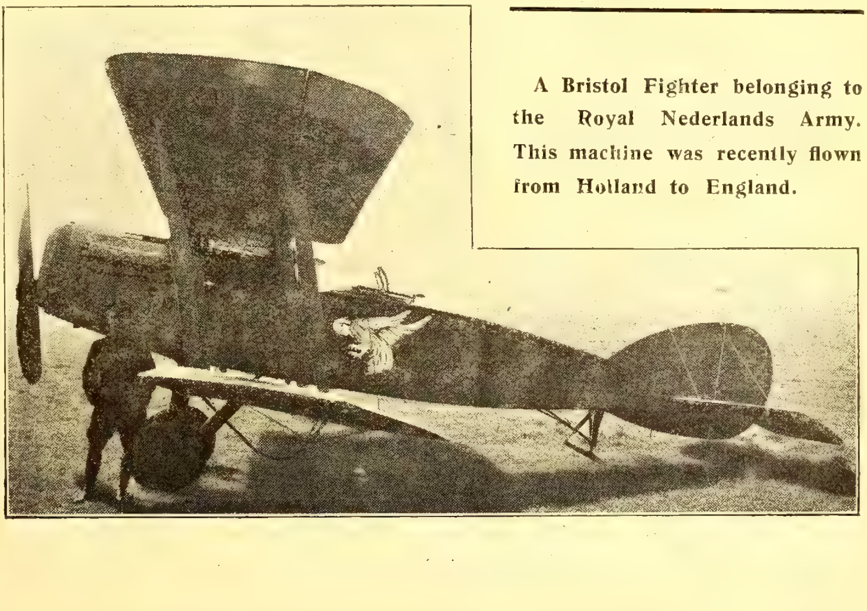
Somewhere about January 15th, 1915, I submitted my resignation as First Sea Lord to Mr. Churchill because of the supineness manifested by the High Authorities as regards aircraft; and I then prophesied the raids over London in particular, and all over England, that by and by caused several millions sterling of damage and an infinite fright.

I refer to my resignation on the aircraft question with some fear and trembling of denials; however, I have a copy of my letter, so it's all right. I withdrew my resignation at the request of Authority, because Authority said that the War Office and not the Admiralty were responsible and would be held responsible. The aircraft belonged to the War Office; why on earth couldn't I mind my own business? I didn't want the Admiralty Building and our wireless on the roof of it to be bombed; so it *was* my business (the War Office was as safe as a church; the Germans would never bomb that establishment!) . . . .

Recently I fortuned to meet Mr. Holt Thomas, and he brought to my recollection what was quite a famous meeting at the Admiralty. Soon after I became First Sea Lord on Oct. 31st, 1914, I had called together at the Admiralty a great company of all interested in the air; for at that moment I had fully satisfied myself that small airships with a speed of fifty miles an hour would be of inestimable value against submarines and also for scouting purposes near the coast. *So they proved.*

Mr. Holt Thomas was a valued witness before the Royal Commission on oil and oil engines, of which I was chairman (a sad business for me financially; I only possessed a few hundred pounds and I put it into oil—I had to sell them out, of course, on becoming Chairman of the Oil Commission—and what I put these few hundreds into caused a disappearance of most of these hundreds, and when I emerged from the Royal Commission the oil shares had more than quintupled in value and gone up to twenty times what they were when I first put in).

Through Mr. Holt Thomas we obtained the very important evidence of the French inventor of the Gnôme engine—that wonderful engine that really made aeroplanes what they now are. His evidence was of peculiar value; and so also



A Bristol Fighter belonging to the Royal Nederlands Army. This machine was recently flown from Holland to England.

was that of Mr. Holt Thomas's experience; and the result of the Admiralty meeting on aircraft was that we obtained from Mr. Holt Thomas an airship in a few weeks, when the experience hitherto had been that it took years; and a great number of this type of aircraft were used with immense advantage in the war. I remember so well that the very least time that could be promised with every effort and unstinted money was three months (but Mr. Holt Thomas gave a shorter time).

In three *weeks* an airship was flying over the Admiralty at 50 miles an hour ("there's nothing you can't have if you want it enough"), and now we've reached the epoch—prodigious in its advent—when positively the air commands and dominates both land and sea; and we shall witness quite shortly a combination in one structure of the aeroplane, the airship, the parachute, the common balloon, and an aerial torpedo, which will both astound people by its simplicity and by its extraordinary possibilities, both in war and commerce (the torpedo will become cargo in commerce). The aeroplane has now to keep moving to live—but why should it? The aerial gyroscopic locomotive torpedo suspended by a parachute has a tremendous significance. . . . .

The following reports and letter will illustrate this history of my efforts in this direction :—

Lord Fisher returned to the Admiralty on Oct. 30th, 1914.

38 S.S. airships were at once ordered—single-engine type. Six improved type.

Before Lord Fisher left the Admiralty a design of a double-engine type was got out, and subsequently another 32 airships were ordered.

Circular letter issued by Lord Fisher in 1914 when First Sea Lord :—

Lord Fisher desires to express to all concerned his high appreciation of the service rendered by those who carried out the recent daring raid on Lake Constance.

He considers that the flight mentioned, made over 250 miles of enemy country of the worst description, is a fine feat of endurance, courage, and skill, and reflects great credit on all who took part in the raid, and through them on the Air Service to which they belong.

The following *précis* of correspondence is inserted because contributory to Lord Fisher's resignation. He had previously written to Mr. Churchill resigning on the ground of the disregard of his warnings respecting the aircraft menace :—

An official secret German dispatch, obtained from a German source, dated Dec. 26th, 1914 :—

The General Staff of the German Army are sending aircraft to attack French fortified places. Full use to be made of favourable weather conditions for attack of naval Zeppelins against the East Coast of England with the exception of London. The attack on London will follow later combined with the German Army airships.

Précis of History of Rigid Airships of Zeppelin Type :—

Lord Fisher, when First Sea Lord, in December, 1908, instructed Admiral Bacon to press for the construction of rigid airships for naval purposes at the meetings of a Sub-Committee of the Committee of Imperial Defence, which held its first meeting in December, 1908, after many meetings at which Admiral Bacon presented the naval point of view with much lucidity. The Committee recommended on Jan. 28th, 1909, the following :—

(*a*) The Committee are of opinion that the dangers to which we might be exposed by developments in aerial navigation cannot be definitely ascertained until we ourselves possess airships.

(*b*) *There are good grounds for assuming that airships will prove of great value to the Navy for scouting and possibly for destructive purposes.* From a military point of view they are also important.

(*c*) A sum of £35,000 should be included in the Naval Estimates for the purpose of building an airship of a rigid type. The sum alluded to should include the cost of all preliminary and incidental expenses.

(*d*) A sum of £10,000 should be included in Army Estimates for continuing experiments with navigable balloons of a non-rigid type, and for the purchase of complete non-rigid airships and their component parts.

Jan. 28th, 1909.

Approved by Committee of Imperial Defence,
Feb. 25th, 1909.

And nothing more was done till I came back to the Admiralty on October 30th, 1914!

SQUADRON DINNERS.

Nov. 1st.—208 Squadron, R.A.F. (No. 8 Naval Squadron). Applications Mr. F. Hammond, 10, Ashbourne Grove, E. Dulwich, S.E. For officers and men together. Price of dinner without drinks, 7s. 6d.

Nov. 8th.—Isle of Grain Air Station. Café Royale Restaurant, Regent Street. Applications Capt. L. A. T. Pritchard, Wadham College, Oxford, before Oct. 29th. Price of dinner without drinks, 15s.

AIR FORCE.

SERVICE DRESS UNIFORM FOR OFFICERS OF THE ROYAL AIR FORCE.

The Air Ministry announced on Oct. 21st that a new pattern Service uniform for officers of the Royal Air Force has been approved by His Majesty the King.

The change of uniform has been decided upon because it was found that the colour of the lighter shade was not sufficiently durable in wear and was liable to fade. Apart from the colour, however, the only variations from the previous pattern are as noted below :

(1) Substitution of black and blue braid for distinguishing ranks on the sleeve, instead of the present gold braid.
(2) Drab pilots' or observers' badges instead of gold.
(3) Abolition of gold embroidery round peak of cap. The peak of the cap will now be of the same material as the crown of the cap.

Officers will not be required to purchase the new uniform until they need to replace, owing to wear, the blue or khaki uniform now in use, but have been informed that no more of the old pattern uniform should be purchased.

Jackets, trousers, and caps will be made of the barathea, though there would be no objection to whipcord of the usual weights being utilised for this purpose if manufacturers can supply such to the correct shade

Breeches will be made of cavalry twill.

For the present the existing pattern blue greatcoat may be worn, but steps are being taken to provide a suitable cloth of the new shade.

The remarks relating to the greatcoat also apply to the raincoat.

Patterns of the complete garments and of materials used (cloth, braid, buttons and buckle) can be seen on application to Room 177, Air Ministry, Kingsway, London, W.C.2. The buttons and buckle are the same as on the old pattern blue uniform. Patterns have also been sent to the Chambers of Commerce of the following towns :—

Bradford, Leeds, Huddersfield, Halifax, Galashields, Glasgow, Manchester, London, Trowbridge, and Bristol.

THE SALE OF AN AIRSHIP.

Short Bros., Ltd., of Bedford, are at present constructing R.38, which is to be sold at cost price to the United States Navy. It is stated that the price will be £500,000.

According to information received from an official source the airship will be the largest in the world. The following statistics are given :—Capacity 2,720,000 cub. ft. (one-third as large again as the R.34). Endurance at cruising speed 45 m.p.h.—nine days. Length 695 ft. Girth 87 ft. 6 in. Engines—four 350 h.p. Sunbeam "Cossack" and two 275 h.p. Sunbeam "Maori." Gross lift, 82 tons. Useful lift, 50 tons. Maximum speed, 70 m.p.h.

THE ROYAL AIR FORCE RUGBY UNION FOOTBALL CLUB.

On Saturday, Oct. 25th, the R.A.F. Rugby XV made their first appearance against the United Services at Portsmouth, and were beaten after a good game. The score, 27 points to 3, gives no indication of the game.

Fixtures (1919-1920) Season.

Nov. 1st.—R.A.F. v. O.M.T. (Old Deer Park, Richmond.)
Nov. 8th.—R.A.F. v. Northampton. (Northampton.)
Nov. 26th.—R.A.F. v. U.S. (Richmond Athletic Ground.)
Dec. 13th.—R.A.F. v. Swansea. (Swansea.)
Dec. 26th.—R.A.F. v. Bradford. (Bradford.)
Dec. 27th.—R.A.F. v. Leicester. (Leicester.)
Jan. 10th.—R.A.F. v. Northampton. (Northampton.)
Jan. 31st.—R.A.F. v. The London Welsh. (Herne Hill.)
Feb. 7th.—R.A.F. v. Navy. (Not settled yet.)
March 6th.—R.A.F. v. Army. (Queen's Club.)
March 27th.—R.A.F. v. Blackheath. (Blackheath.)
April 2nd.—R.A.F. v. Neath. (Neath.)
April 3rd.—R.A.F. v. Llanelly. (Llanelly.)
April 5th.—R.A.F. v. Ebbw Vale. (Ebbw Vale.)

FRANCE.

A SAINT RAPHAEL-KENIFRA FLIGHT.

An escadrille of six aeroplanes, under the command of Lieut. Mercourt, will leave Saint Raphael for Kenifra, Morocco, towards the end of October. During the oversea part of the journey the escadrille will be followed by the patrol vessel "Coccinelle." Landings will be made *en route* at Valence, Tarragona, Santapola, Alleria, Malaga, and Rabat.

A FRENCH AIR ATTACHE IN CHINA.

The French Government has appointed a French air attaché at the French Embassy in Pekin. The French appreciate the high importance of aeronautical development in China. The land is vast, the communications almost primeval. The stores of unexploited wealth in the country are enormous and the first Western nation to give due attention to Chinese commerce will acquire wealth with ease.

London-Paris

Air Express

Summary of First Nine Weeks' Flying.

August 25th, 1919, to October 25th, 1919.

Flights Scheduled	139
Flights accomplished	135
Prevented by weather	1
Interrupted by weather	1
Interrupted by mechanical defects	2
Number of Miles flown	34,000
Average Speed (M.P.H.)	106

The following is an official summary of the weather flown through during these nine weeks.

Days favourable for flying	17
„ unfavourable for flying	26
„ noted officially as "unfit" for flying	11

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
25-27, Old Queen Street, S.W.1.

Full particulars regarding rates and freights can be obtained from Aircraft Transport and Travel, Ltd., 25-27, Old Queen Street S.W.1, or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C., and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street, and Beak Street, W.; Lepaerial Travel Piccadilly Circus (Criterion Corner); Carter Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; and Hernu, Peron & Co., 98-100, Queen Victoria Street, E C.

PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysées.

THE FRENCH MISSION IN SWITZERLAND.

The French military aeronautical mission accredited to the Swiss Government has returned to France, it duties having been completed. Apparently all questions have been amicably settled.

AVIATION IN MOROCCO.

There are at present about 60 military aeroplanes in Morocco and there will be about 200 in the immediate future. They are used by the military for the conveyance of the sick and wounded, the transport of food, and for isolated posts.

There are in Morocco at present eight escadrille headquarters, 26 aeronautical bases with hangars, and 56 simple landing grounds.

ITALY.

THE ROME-TOKIO FLIGHT.

The arrangements for the Rome-Tokio flight interrupted by the "self-determination" of Signor Gabriele d'Annunzio and Fiume, have now been completed. The following officers will take part :—Lieut. Casagrande (Italian Navy), Lieuts. Ancilloto, Perrarin, Locatelli, and Polisco on S.V.A. aeroplanes, and Lieuts. Bonalumi, Garrone, Negrini, and Scavini on Caproni machines. The route to be taken is as follows: Rome, Gisia del Colle, Sclaica, Adalia, Aleppo, Baghdad, Basra, Chanbar, Karachi, Delhi, Benares, Calcutta, Rangoon, Bangkok, Hanoi, Canton, Foochow, Shanghai, Kiaochow, Pekin, Chefoo (?), Fusan, Osaka, and Tokio. The whole distance is about 10,600 miles.

RUSSIA.

OFFICIAL COMMUNIQUE (ESTHONIAN).

OCT. 26th.—In the Finnish Gulf, in the direction of Krassnaya Gorka, an enemy seaplane was shot down by our fire.

SPAIN.

THE PURCHASE OF MILITARY AEROPLANES.

On Oct. 18th the official gazette published a decree authorising the direct purchase of fifty French bombing machines and forty-six machine guns. One regrets to see so large an order given to other than British firms.

A PRESENTATION AEROPLANE.

On Oct. 24th a British aeroplane which had been presented to H.M. King Alfonso was officially handed over at the Cuatro Vientos Aerodrome in the presence of the British Ambassador, Sir A. H. Hardinge and Lady Hardinge.

SWITZERLAND.

The Swiss Government has now recognised the right of the Allied Powers over all German military aircraft and it has been decided that no aeroplane shall be purchased from Germany unless the consent of the French Government has first been obtained.

AN ATTEMPT ON THE HEIGHT RECORD.

On Oct. 23rd the Swiss Military aviator Progin ascended from Thoune in a Swiss-built monoplane with a 200 h.p. engine, to attempt the world's height record. At an altitude of 27,000 ft. the oxygen supply failed owing to a leakage and M. Progin became unconscious. The uncontrolled machine began to descend, but when at 4,000 ft the aviator recovered consciousness and regained control. He landed safely at Thoune after two hours' flight.

U.S.A.

THE TRANSCONTINENTAL AIR RACE.

Although Lieut. B. Maynard led all the way in the Army Air Race his actual flying time exceeds that of some other competitors. Lieut. Pearson's flying time is stated to be 48 hours 57 mins 16 secs. Capt. Donaldson's time is officially given at 57 hours 33 mins. 57 secs. Lieut. Maynard was in the air for 67 hours 3 mins. 40 secs.

THE AVIATION SECTION, SIGNAL OFFICERS RESERVE CORPS.

The following paragraph is extracted from the United States "Air Service News Letter" of Oct. 8th, 1919 :—

" Attention is called to the fact that officers of the Aviation Section, Signal Officers Reserve Corps, have been authorised to wear the insignia now worn by officers of the Air Service in addition to the letters " U.S. " with super-imposed " R."

A MEXICAN INCIDENT.

A Reuter message from San Diego, Cal., dated Oct. 26th says :—

"It is officially announced that the United States Army aviators, Lieuts. Connolly and Waterhouse, who have been missing since Aug. 21st, were murdered by two Mexican fishermen at Bahia-Los Angeles, Lower California, where the pilot alighted after losing his way during a border patrol flight. The identity of the murderers, who came from a Mexican sloop, is known both to the American and Mexican authorities, and a search is being made for them. The bodies of the aviators arrived here on board a destroyer on Sunday.

"Investigators found messages scrawled on the fuselage of the aeroplane, which showed that the officers were for 9 days without food and were compelled to drink water from the radiator. On Sept 1st the two fishermen, who came from the sloop 'Esperanza,' removed the aviators from their machine, which was floating, and rowed them ashore, where they were stabbed to death during the night of Sept. 1st, probably while asleep Their heads were also crushed. The bodies were found under a slight covering of sand, with portions of their limbs protruding. The Mexicans had looted everything portable from the machine."

* * *

THE PITY OF IT.

By S. F. BENDA.

Five years ago, at the beginning of what afterwards came to be considered by the less thoughtful as a very big war indeed, the English-speaking nations—of course, that excludes America—owned two fairly efficient and thoroughly effective Flying Services. The Great British Nation went to war, and proved its claim to the adjective " great " by the very greatness of its mistakes. The two Flying Services went to the war with their respective parent Services and the senior Flying Service—the R.N.A.S.—was precipitated into a little civil war as well.

It is useless to go over old ground and arouse the memory of old half-forgotten insults, particularly when, if the rumour can be credited, the Navy is about to make amends —truly, it is late in the day to amend anything—but better late than never. The R.N.A.S. was never a favourite of the Royal Navy, but there were faults on both sides, as all who know the inwardness of things will own. Still, even the very worst faults of the R.N.A.S. did not justify the formation of the Royal Air Force.

Because the good must ever suffer for the vices of the bad, the R.F.C. was turned into the Military Branch, R.A.F. Because the sins of the fathers are visited upon the children, the great British Nation—great as ever in its foolishness—looked at the R.N.A.S. and said, " Inefficient! What can one expect when the Navy does nothing?" and the R.N.A.S. became the Naval Branch, R.A.F. Then there grew up that curious conglomeration of sailors, soldiers and civilians, called the Independent Force, R.A.F., which did some quite wonderful things over Germany—and then came the Armistice.

Then the newspapers—short of war copy—looked about for scandal with which to fill their columns, and found plenty of it in the R.A.F. First there was waste. The contracts were too large; there were too many machines; there were too many aerodromes, and too many men keeping them in order. The size of the R.A.F. was too great—there would never be another war, argued the newspapers, forgetful of wars in Russia and Afghanistan, and sundry other places—the pay of the R.A.F. was all wrong. People found things were wrong with the W.R.A.F.

But none saw the real scandal—the real cause of waste—the R.A.F. itself. None realised how much cheaper it is to own two Services, with merely two headquarters, instead of three. And none had the courage to own that what had happened with the W.R.A.F. was merely what one might have foreseen must happen when one took women in the Service and expected them to do men's work in a man's way and so changed their whole outlook on life One does not believe there is any woman living who is fit for a Service life, for to make a success of a Service career one's Service must come first before all things.

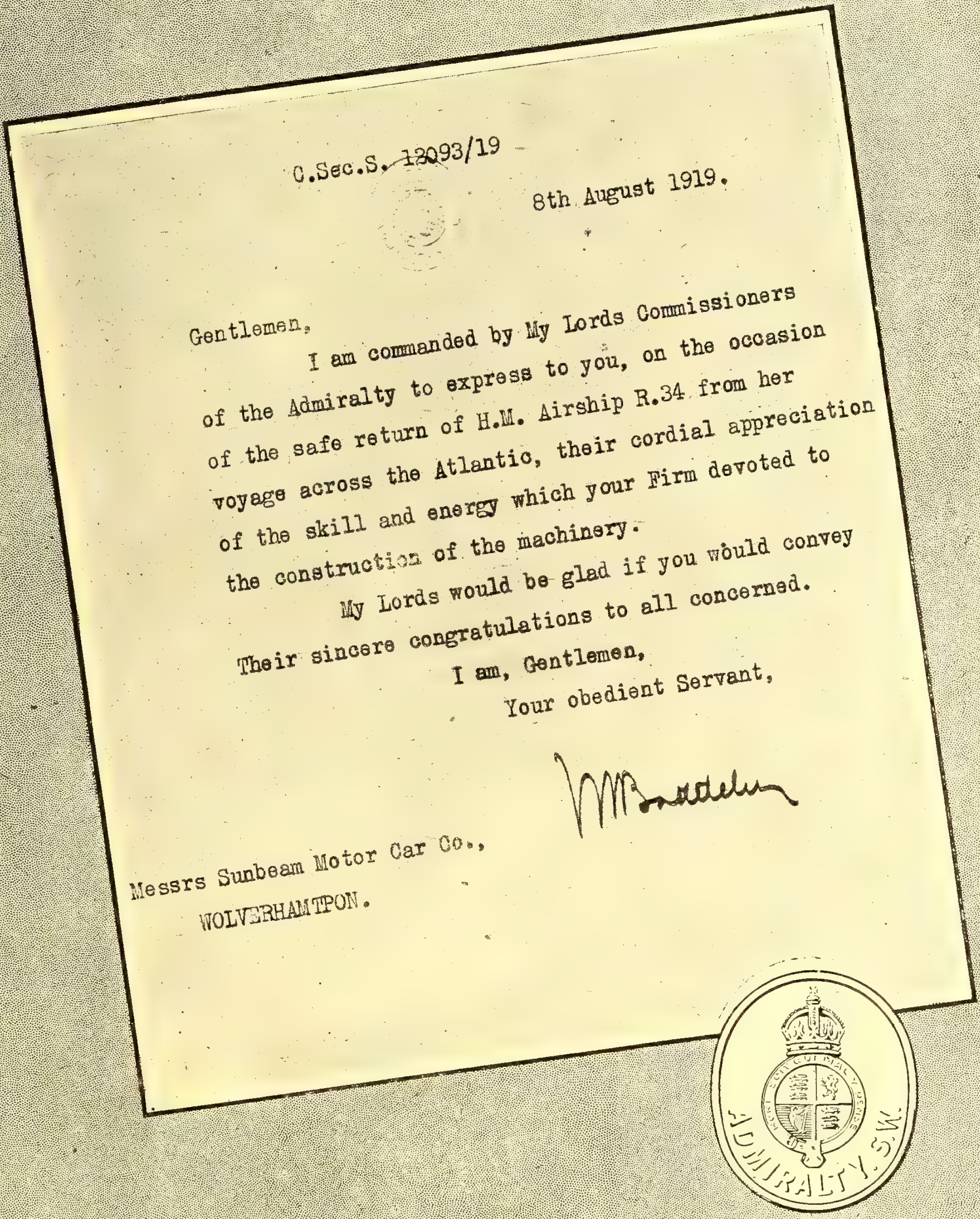
Talking to an R.A.F. officer recently one was told, "We have never been given a chance." That sums up the whole situation.

From the beginning the R.A.F. has had no chance. It is formed of two small pieces of the senior Services who hated each other and themselves, and a third piece of civilians enlisted straight from, theoretically, school, but actually, judging from manners and customs, the street. Ridicule, in the shape of uniforms, decorations and the exaggerated praise of the daily newspapers, has been freely bestowed.

The Air Ministry, with absurd rules, and more absurd "news stories," and utterly ridiculous competitions, has helped to make the Service an object for contempt. Jealousy has been fostered between the three Services in the past by the too liberal pay and allowances of the R.A.F., and although this has now been put right it still remains an imaginary grievance on the part of the senior Services.

Is it much to ask that the R.A.F. shall be given a chance? Even the condemned criminal has a right of appeal, and the R.A.F. has been condemned only by the Press and the Government action. Which is the pity of it.

SUNBEAM-COATALEN
Aircraft-Engines



C.Sec.S. 13093/19

8th August 1919.

Gentlemen,

I am commanded by My Lords Commissioners of the Admiralty to express to you, on the occasion of the safe return of H.M. Airship R.34 from her voyage across the Atlantic, their cordial appreciation of the skill and energy which your Firm devoted to the construction of the machinery.

My Lords would be glad if you would convey Their sincere congratulations to all concerned.

I am, Gentlemen,
Your obedient Servant,

Messrs Sunbeam Motor Car Co.,
WOLVERHAMTPON.

BOOKS REVIEWED.

SOME SECRET SIDES OF THE WAR.

Readers of this paper will recall various reviews by Mr. Rex Brittain of the works of M. Jacques Mortane, the eminent French writer on aerial warfare, which appeared during the war. None of those books have appeared in English. At last, however, those who are unable to read M Mortane's brilliant little pen-pictures in their original tongue have an opportunity of reading him in a peculiarly excellent translation. Mr. Brittain, having absorbed M. Mortane's spirit by the process of reading his other books for purposes of criticism, has translated his latest work, and has managed to retain in it very much of the Gallic spirit of the original.

The book in question is entitled "Special Missions of the Air." The phrase "Special Missions" has for a long time connoted that peculiarly dangerous class of air work which was concerned with the taking of spies (euphemistically known as "agents") behind enemy lines and with bringing them back when opportunity offered.

In the early days the aviators carried their agents to the wild places of the earth which were nominally occupied by the enemy and landed there so that their passengers might alight. Later in the war the said agents were, as a rule, dropped by parachute, thus, perhaps, reducing the risk to the aviators who dropped them, but by no means decreasing their own risk.

The Work of Heroes.

M. Mortane describes, with that peculiarly graphic style which is his own, the work of various notable aviators who were concerned with these dangerous missions. The late Jules Védrines was one of the first to distinguish himself in this work, and M. Mortane notes how the French populace, with whom Védrines had been a popular idol before the war, were disappointed that he did not show up as a Hun-killer in the early days of the war, little knowing that their idol was in fact doing work of a far more dangerous character than the mere killing of Huns.

Even to those of the R.A.F. who have themselves been employed on similar missions the book will be of very great interest, and to the ordinary devotee of aviation who knows nothing of the actual work of the spy-droppers these vivid stories will come quite as a revelation. M. Mortane's method of telling his stories varies between straight narrative of his own, personal narrative of the spy-droppers retailed at second-hand by himself, and letters from the spy-droppers to their relatives reproduced verbatim. Whichever method he adopts, his story, as translated by Mr. Brittain, stands out as an absolute picture of the events and of the emotions of those who took part in these adventures.

Mental Honesty.

Not only does M. Mortane deal copiously with the work of the French spy-droppers, but he has the mental honesty to give descriptions of similar work by German and Turkish aviators, and he is so free from national jealousy as to give peculiarly vivid accounts of spy-dropping and rescuing by Italian aviators who worked with flying-boats on the rivers behind the Austrian lines. In fact, his account of the work of the Italian Naval aviators is quite one of the most interesting chapters of his book.

One's only criticism of the work is that in the haste of reading proofs so as to get the book through under adverse circumstances as quickly as possible Mr. Brittain has committed a few technical solecisms, as, for example, he allows the French rank of "Adjudant" to be spelled as if it were the British appointment of "Adjutant" and he also allows the machine technically known as a "hydro-aeroplane," or, in French, as a "hydravion," to appear as a "hydroplane," which, of course, it is only in part.

One is tempted to quote largely from the stories in the book, but to do so would be to deprive the reader of the genuine thrills to be obtained from reading how the gallant French pilots landed in and escaped from enemy territory, and how the Italian flying-boat pilots brought away whole crews of spies at one effort on small two-seaters.

Our Own People.

Evidently, the soldierly reticence of our own spy-droppers has prevented M. Mortane from mentioning any British feats in this direction, otherwise one can imagine with what zest he would have described how one Ridley spent weeks in enemy territory, after having crashed his machine in landing a spy, and enjoyed himself by sitting disguised as a peasant on the edge of one of the most important of all German aerodromes watching the machines depart and arrive. With no less pleasure would he have related how a certain Jack Woodhouse spoilt a perfectly good pair of riding breeches by sitting on top of an unduly hot Raf engine changing the plugs which had oiled up while the engine was ticking over on the ground pending the alighting of the spy with whom he had arrived.

Not less entertaining would have been M. Mortane's account of the particularly brave spy whose bravery stopped at parachuting, and who only consented to alight by parachute on the condition that matters were arranged so that he should be dropped through a trap-door unexpectedly and thus would be saved the anticipatory horrors of waiting for the drop. One would suggest that Capt. Alan Bott (otherwise known as "Contact"), when at a loss for a subject for the inimitable "Blackwood," should devote himself to interviewing some of our own spy-droppers and putting their stories on record.

Meantime, those who want to get an insight into one of the phases of the war which has hitherto been of the most secret will do well to read M. Mortane, *via* Mr. Brittain.—C. G. G.

["Special Missions of the Air." The Aeroplane and General Publishing, Co., Ltd., 61, Carey Street, W.C.2. 3s. net; 3s. 3d. post free.]

THE DOCTOR AND AERONAUTICS.

[The Medical and Surgical Aspects of Aviation. By H. Graeme Anderson, M.B., Ch.B., F.R.C.S., Surgeon-Lieutenant, Royal Navy, Surgeon, Royal Air Force. Pp. xvi+255 Illus. Henry Frowde and Hodder & Stoughton, London, 1919. 12s. 6d. net.]

When young that branch of literature devoted to the mysteries of medicine had a curious charm. The strange language in which its principles were outlined, the intriguing designs with which it was illustrated, each held attraction for the inquiring brain. After a brief period of study there were few diseases from which one knew oneself to be exempt at the moment of reading. But there was ever an odd joy in the contemplation of a future well spent in diseased living. To those jaded by the horrors of Lyceum drama the attraction of a surgical operation provide a refreshing interlude. When in addition the medical and surgical story is complicated by the intricacies of an aviation accident the excitement is quadrupled.

The science and practice of aeronautics has lacked until recently a treatise dealing authoritatively with the medical and surgical aspects of the aviator's or aeronaut's life. This deficiency has been supplied by Mr. H. Graeme Anderson, M.B., who was during the recent war a surgeon-lieut. in H.M. Navy attached for a long period to the Royal Naval Air Service, and later with the Royal Air Force, to which he is now consulting surgeon.

The late Secretary of State for Air writes a short introduction, and chapters are contributed by Lieut.-Colonel Martin Flack, M.A., M.B., Director of Medical Research in the R.A.F., and Surgeon-Lieut. O. H. Gotch, M.B., Ch.B.

Mr. Anderson begins his work with a brief chapter on medical interest in aeronautics, which is in truth an outline of the history of practical flying both in balloons and aeroplanes. He speaks of the curious effects of height on balloonists. "Madame Blanchard," for instance "suffered from severe epistaxis at 22,800 ft."; also "Gaston Tissandier, Sivel, and Crocé-Spinelli all suffered from altitude effects. Prominent among the signs and symptoms were difficulty in breathing, loss of muscular power, venous congestion, nasal and pulmonery hæmorrhage, headache, vomiting, and torpor."

But the author does not explain how it is that such altitude effects were infinitely more common in ballooning during pre-aviation days than they have been in aeroplane flying. In aviation, in so far as one's personal experience indicates, there is less altitude effect than is common in mountaineering. Possibly psychology can supply a reason.

There are three chapters of high interest devoted to the "Selection of Candidates for Aviation," "The Applied Physiology of Aviation," and "The Psychology of Aviation." In these the relation of the physical and mental is outlined simply and clearly.

Mr. Graeme Anderson summarises so well the aviator's duties in war-time that it is desirable at the cost of space to reproduce the paragraph dealing with this matter. "To realise the value of the standards of fitness required it is well to know something of the aviator's duties in war-time. On the one hand, he has usually comfortable quarters, a good bed and food, and has not to undergo the long marches and discomfort of trench life as in the infantry work. He is usually out of range of enemy artillery fire, although subject to hostile aircraft attack. In weather unfit for flying he has much leisure time. On the other hand, in the crowded hours of his daily work he may come through the most intense strain to which the human nervous system can be subjected.

"As it has been aptly put, an aviator's life consists of 'long spells of idleness punctuated by moments of intense fear.' He has to face extremes in the elements, intense cold, the sun's glare, rain, wind, fog and mist, and gusty or bumpy weather. There is the incessant noise of his engine; he may have long-distance patrols, in which the imagination is given free play to run riot, perhaps over the sea, with no landmarks, and the dread of engine failure ever present in his mind. His visual acuity is sharpened, always on the lookout for hostile aircraft, watching for and registering the flash of enemy guns, taking photographs, noting movements of enemy troops, rolling-stock, submarines, or other information of naval or military value, and subjected to more or less accurate anti-aircraft gunfire from the ground. Often he has to reach altitudes where the available oxygen is reduced by one-half. He may have suddenly and rapidly to change height, as in the modern aerial fight in which he may be opposing more than one enemy machine. His judgment has to be most accurate to perform the various intricate aerial evolutions so as to outwit his opponent and gain a favourable position to rake him with machine-gun fire. He may have to loop, spin, dive, or sideslip, apparently out of control, in order to deceive his opponent or to decoy him over a friendly gun or near a friendly formation. There is the subconscious dread of his aeroplane catching fire in the air. Lastly, and most exciting of all, is the nerve strain of contour chasing or ground strafing, in which he attacks the enemy on the ground from a low height of perhaps 20 to 50 feet."

The description could hardly contain more truth or be more comprehensive.

He states later that there is a particular temperament for flying, and realises that it is not a quality easily to be clinically estimated. Sluggish mentality is a disqualification for flying. Surgical disabilities, such as the lack of one or other leg, do not in every case prevent a candidate from becoming an excellent pilot. But the stomach should operate with the imperturbable exactitude of a Waltham watch. Trunk injuries are not necessarily a disqualification, and the author implies that he knows three cases of aviators still flying who have fractured their spinal columns, of course without injury to the spinal cord.

He says that the past history of the candidate in the matter of smoking and drinking intoxicants is important and is almost impossible of determination in the examining-room. Neither are really dangerous to the pilot providing moderation is practised. "A history of malaria with recent attacks should be a cause for rejection," as malarial cases rarely do well in aviation, especially in cold countries.

In the chapter on "The Psychology of Aviation" the never-ending subject of "fear" is dealt with at length. There is great difficulty in obtaining any accurate data as to the mental state of the average pilot. Introspection is not a habit encouraged in aviation, yet without it there is little chance of true self-description.

The author in his official capacity drafted a form containing a series of questions to be answered by pupils after their first flight alone. Of 100 pupils who completed these forms none confessed to being without fear, and none admitted that they had nervous dispositions. But little reliance can be placed on any man's statements as to his feelings, else the marriage state would have been less provocative of trouble.

The author emphasises the necessity of sympathy on the part of the instructor. The habit of sneering or of bullying will destroy the remaining nerve of many a promising pilot.

A large part of the book is devoted to the description of aeroplane accidents with details of the surgical difficulties immediately attendant on each. Many illustrations are given of aeroplanes destroyed or in the course of destruction by carelessness or accident.

In a section on the "Surgery of Aviation" descriptions and photographs are given of the fracture of the astragalus, an event common only in aeronautics, and of the effects of "waterbite."

The book is written in English of a degree very uncommon. It appeals not only to those expert in medical science, but to all who have a deep interest in aviation and its problems.—W. E. DE B. W.

A RECORD OF A GREAT SQUADRON.

Already there have been produced a few regimental histories of the war recording in detail the deeds of individual territorial regiments which are not linked to line regiments, some battalions of the New Army have produced histories of themselves, and in the cases of certain line regiments with a distinguished history in the past, that history has been brought up to date to the end of the war. But so far as one has discovered, no individual history of any one squadron of the Royal Air Force has been produced until quite recently, when the annals of No. 100 Squadron, R.A.F., were produced by Major C. Burge, O.B.E., who commanded the squadron at the end of the war.

The 100th Squadron has the distinction of being, in the words of Air-Marshal Sir Hugh Trenchard, who has contributed a foreword to the book, "The first complete night-flying squadron that was sent to the Western Front." It arrived in March, 1917, and was under General Trenchard's command for practically the whole of its time in France, for it remained on the Western Front until October, 1917, when it proceeded to the Nancy area in order to begin bombing Germany.

As to the quality of the squadron, one cannot do better than quote Air-Marshal Trenchard again apropos its services on the German frontier. He says, "There it went through one of the hardest winters we have had, but it kept up its great reputation and increased it. The pilots and observers were always cheery and ready to carry out any work asked of them, and in the worst weather they showed the utmost determination to get to the targets they had been ordered to bomb, very often in thunderstorms, or thick fog and mist. Many times they attempted the work when it was impossible to see the ground from above 100 feet owing to mist.

"The rank and file were noted amongst squadrons for being exceptionally good at keeping their engines and machines in serviceable order. This was not easy, and the men very often worked all day and all night.

"In 1918 it still kept up its great name, and was one of the quickest squadrons I have ever had under my command at learning new type machines when it was re-equipped with Handley Pages.

"I can only say that it was one of 'the great squadrons' of the war, and I was very proud to have had the honour of commanding such an efficient squadron."

Major Burge, in his introduction, says that the book is intended to give all ranks a complete record of the squadron's work, and it is moreover intended as a memorial for those who gave their lives for their country while serving in the squadron. With this object in view, the names and addresses of all ranks who served with the squadron are included in the book with the idea that individuals may be able to get in touch with one another.

A further interesting point about the squadron is that it was originally formed in February, 1917, by Major M. G. Christie, D.S.O., M.C. (later Lieut.-Col. and C.M.G.), who has himself a very remarkable record, being a pilot of considerable antiquity, and one of the very few pre-war pilots who owned and flew his own aeroplane.

The book itself is an actual history of the work of the squadron, into which are interpolated here and there chapters of a descriptive nature which illustrate the history without actually continuing it. Thus, for example, there is a chapter by Mr. "Boyd Cable" on a machine which alighted in Hunland and escaped, there is a series of verses, very much of the "field-service" type, but quite amusing, by Corporal J. R. Bird, there is an account of a short night raid by Lieut. W. A. Barnes, and other matter of a similar nature.

A very interesting section of the book is that devoted to the squadron "operation reports," which contain the names of all those taking part in the various bombing raids and detailed reports of the raids. These reports will be news as well as education to a great number of people. The operation reports are illustrated by a number of very illuminative photographs of the places raided, some of them on the "before-and-after-taking" principle.

Added interest is given to the book by the accounts written by some of the officers who had the misfortune to fall into the hands of the enemy. The list of killed and died makes very depressing reading, but consolation is found in a list of honours and awards won by people serving in the squadron.

After reading the book one is glad to find that No. 100 Squadron is to be included among the permanent squadrons of the Royal Air Force, and one feels that this book will be of the very greatest use in carrying on the war tradition of the squadron in time of peace.

It was originally intended that the book should only be sold to officers and men of the squadron itself, and with this idea in view it has been produced in two editions: an *edition de luxe* at 30s. and another, somewhat more cheaply bound but very finely produced, at 15s. However, the interest in the book is such that it should undoubtedly be in the hands of all those who take a really keen interest in military aviation, for it is not merely a history, it is an informative document on air war. Therefore, one is glad to know that those who are sufficiently interested to pay the price may obtain copies, so long as any remain unsold, at the prices mentioned.

Those who wish to have copies are invited to write to the compiler of the work: Major C. Gordon Burge, O.B.E., at, Dent-de-Lion, Westgate-on-Sea, Kent.

Major Burge deserves hearty congratulation on the way in which the book has been produced, and one hopes that it will not merely pay its way but that it will make a profit, which profit will be applied to other good work in connection with the squadron.

THE AUSTRALIAN FLIGHT.

Capt. G. C. Matthews, Aus. F.C., and Serjeant T. Kay, Aus. F.C., left Hounslow at 11.44 a.m. on Oct. 21st on the Sopwith "Wallaby," with 375 h.p. Rolls-Royce engine. This fact was noted in last week's issue of The Aeroplane.

A large number of people, including representatives of the Australian Government and of the Air Ministry, witnessed the start. Numerous messages of good wishes were received by Capt. Matthews before his departure, including the following from Capt. H.R.H. the Prince Albert, K.G., R.A.F., "May good fortune attend you in your sporting flight." Among a small number of postal packets carried was a letter from His Majesty the King to the Governor-General of Australia.

According to the "Morning Post" of Oct. 22nd Capt. Matthews had not decided definitely on his first stopping-place, but would probably land near Paris.

Nothing, then, was heard of the aviators until Oct. 24th, when the Air Ministry issued a statement saying that they had landed at Cologne at 2 p.m. on Oct. 22nd.

Before he started the flight Captain Matthews remarked that the Paris-Lyons-Fréjus route was not the straightest, and that he might make as direct a line as possible across Germany. Although flying over the recent enemy countries is forbidden at present, Capt. Matthews probably thought that it would be within the law to land at the British outpost, the 3rd Wing of the R.A.F. at Cologne.

A Reuter message from Melbourne dated Oct. 17th stated that flying officers had made a survey of the air route from Port Darwin to Melbourne, and that the Australian Navy would maintain a sea patrol between Kupang (Timor) and Port Darwin. Petrol would be available at Port Darwin, Cloncurry, Charleville, Narramine, and along the route thence to Albury and Melbourne.

AUSTRALIAN DEVELOPMENTS.

An interesting visitor to this country at the moment is Mr. H. C. Macfie, a well-known resident of Sydney, New South Wales, and chairman of a new Australian aircraft firm officially entitled, Aerial Company Limited. Mr. and Mrs. Macfie arrived in England a few weeks ago, partly on a holiday, but, one learns from Mr. Macfie, also with the intention of purchasing aeroplanes for his firm, which intends to carry out aerial transport with seaplanes and land machines in Australia.

Mr. Macfie has long been interested in aviation, and it was very largely owing to his efforts that the New South Wales Flying School was formed at Richmond, near Sydney. It will be remembered that Mr. W. J. Stutt, one of the best pilots in this country, went out to Australia early in the war to superintend the work of that school, and it is of interest to know that the school has been so successful under his management that Mr. Stutt himself has now been selected by the Federal Government of Australia to be one of the chief advisers of the Government on aerial matters.

Aerial Company Limited started operations by buying two D.H.6s from the Australian Government School at Point Cook, Victoria, when the coming of the armistice put an end to the training of Australian pilots in quantities, and these machines have been doing very good work in and around Sydney since they were purchased.

The A.C.L.—as the firm is commonly called—is financed by private capital. The managing director is Lieut.-Col. P. W. Woods, D.S.O., M.C., and other directors are: Capt. H. Gilles Watson, D.F.C.; Capt. J. H. Matthews; Lieut. N. P. H. Neal, M.C., M.M.; Mr. G. P. Mann; Mr. Lebbeus Horden (who is himself one of the pioneers of aviation in Australia, having imported a Maurice Farman seaplane somewhere about the year 1911); and Mr. H. C. Macfie, who is chairman of the directors.

Capt. C. H. Chateau, R.A.F., is the firm's aerodrome manager.

Those who know the D.H.6 machine, which, despite its many good qualities as a training machine, is hardly what one would choose for long-distance cross-country journeys, will be interested to hear that after the purchase of these two aeroplanes (Nos. B.2802 and B.2803) they were flown from Point Cook, near Melbourne, to Richmond, near Sydney, the pilot of the first machine being Lieut. R. F. Oakes, A.F.C., and of the second machine Capt. P. G. Taylor, M.C. Owing to the fact that the machines were by no means new, and were probably not in the very best condition, the first machine took seven days over the journey and the second one did not arrive until a week later. All the same, considering that the tank capacity of the D.H.6 is only about enough for two hours' flying, and that the speed of the machine is nearer 50 than 60 miles an hour and that there were no landing-grounds *en route* and that there were no adequate tools or spare parts with it to do repairs, the flight is by no means unworthy of the record of the Australian Flying Corps. As a matter of fact, the actual flying time of the first machine for the 560 miles or so was 9¾ hours.

Besides being used for ordinary "joy-riding," the machines have been used largely for advertising purposes in and around Sydney. For example, the well-known drapery firm of David Jones, of Sydney, acquired much merit by engaging one of the A.C.L.'s D.H.6s. to distribute advertising literature over the city.

The firm have the intention of acquiring hydro-aeroplanes of sorts, whether flying-boats or seaplanes is not decided at the moment, so that the "joy-riding" business may be extended in future to the holiday resorts of Sydney Harbour. Apparently the firm has good money behind it and has a thoroughly efficient flying personnel, and so it seems to have every prospect of success.

Mr. H. C. Macfie is also president of the New South Wales section of the Australian Aero Club, which is affiliated to the Royal Aero Club of Great Britain. In May last the New South Wales section held a special meeting, and a friendly arrangement was made with the older Victorian section of the Australian Aero Club that the two sections should have entirely independent control. Apparently the New South Wales section of the Club is going very well and it now numbers several hundred members. The secretary of the new organisation is Mr. S. J. Hart, whose official address is the Australian Aero Club, New South Wales Section, Box 2516, G.P.O., Sydney.

One of the first of the activities of the newly formed section was to welcome home the squadrons of the Australian Flying Corps which returned to Sydney on June 19th in the S.S. "Kaiser-i-Hind." The returning officers and airmen, who were under the command of Lieut.-Col. W. Oswald Watt, D.S.O., were entertained at a gala performance at Her Majesty's Theatre, Sydney, on June 24th, 1919.

ON BLAZING THE TRAIL.

It has been pointed out by a reader of The Aeroplane, evidently a very careful reader, that the article published last week on "Blazing the Trail" did in fact misrepresent the position as regards the Department of Information at the Air Ministry. The Air Ministry communiqué to which the article referred did not state definitely in so many words that the F5 flying-boat which visited Stockholm flew over that city. What the communiqué did make clear was that exhibition and passenger-carrying flights were carried out at Christiania, Christiansand, and Copenhagen, that the boat visited Stockholm as well, and it implied that a good impression was created in each of the Scandinavian capital towns visited. It will, one thinks, be admitted that the communiqué was liable to convey the impression that some sort of an exposition was given at Stockholm as well as at the other places specifically mentioned, especially as the communiqué draws attention to the fact that "in Sweden a natural seaplane highway extends right across the country," and that Scandinavia is perhaps the best market in the world for water-going aircraft.

One tenders one's regrets to the Department of Information for misrepresenting the ideas which it intended to convey, and one hopes that in future communiqués of this nature there will be no possibility of misunderstanding.

It is understood that Major-General J. E. B. Seely, Under Secretary for Air, was to make a full statement in the House of Commons on Oct. 28th regarding the alleged disasters to officers and airmen of the R.A.F. who have attempted to fly from London to Cairo

The Handley Page Company made the following statement to the "Morning Post" with regard to the allegations:—

"If the statements concerning the high death-roll among pilots engaged in flying machines from London to Cairo are correct and a whole series of accidents have occurred, it cannot be wholly due to unfortunate coincidences, but must be caused by some lack of organisation somewhere. It would be interesting to inquire why so many engine failures caused the forced landings to which reference has been made. If, as stated, the rubber connections of various engine parts were deteriorated, it would look as if the engines needed overhaul before their dispatch.

"The lack of competent riggers and mechanics along the routes traversed by the machines may perhaps be explained by the fact that a great many of the personnel have been demobilised. Some inquiry would, however, seem to be necessary in order to find out why one machine, for instance, caught fire near Rome although flown by a very experienced pilot, and also why 30 per cent. of the three squadrons of machines detailed to fly from France to Egypt failed to reach their destination.

"The machines which were used for some of these flights—the twin-engine Handley Page—are of the same type that was so successful in bombing Germany during the war and carrying out the London-Paris-Brussels-service since. As is well known, machines of this kind have flown to Calcutta from England, so that it would appear that there must have been something wrong in the organisation if so many machines failed to reach their destination."

ROLLS ROYCE

THE HISTORY OF THE CROSSING OF THE ATLANTIC.

¶ The first crossing of the Atlantic was accomplished by Christopher Colombus in the year 1492. He completed the journey, Palos (in Spain) to San Salvador, in :: :: :: 41 days in the sailing ship "Santa Maria." :: :: ::

¶ The first steamship, without the use of sails, to cross the Atlantic was the "Sirius," which sailed from Cork on the 4th April, 1838, :: :: and arrived at New York 17 days later. :: ::

¶ The fastest trip ever made across the Atlantic by an Atlantic Liner was made by the "Mauretania" in September, 1909, from Queenstown to New York—the time taken between Fastnet Light and Ambrose Channel Light Vessel being 4 days, 10 hours, 41 minutes.

¶ The first direct flight across the Atlantic was made on June 14th/15th, 1919, from St. John's, Newfoundland, to co. Galway in Ireland, by a Vickers "Vimy" type Aeroplane fitted with two Rolls-Royce 360 h.p. engines. The time taken was only 15 hours, 57 minutes.

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THE WEEKLY COMMENTARY.

The last few months have seen the production of a very considerable number of books dealing with the technical aspects of aeronautics. Some of these works are excellent, and some are appallingly bad.

Several of these works, mostly good, are reviewed below.

The Parnall "Panther," a machine having a number of novel features destined to fit it for the purpose of reconnaissance at sea, using a ship as its aerodrome, is described in this week's instalment of "Modern British Aeroplanes."

A description of French methods of airscrew construction, contributed by a correspondent in Paris, is printed on page 1537 *et seq.*

The two types of plywood construction present features of interest, and this method of construction presents very considerable interest from the point of view of economy in material.

Some details of the Zeppelin giant sea-monoplane are given on page 1524.

SOME TECHNICAL LITERATURE.

Solomon—in the days when literature was yet young—remarked that "of the making of books there is no end"; and Shakespeare—apropos some quite other affair, but quite appositely to the subject of Solomon's prophecy—complained that "this is indeed a bloody business."

Had Shakespeare the advantage of an acquaintance with applied aeronautics, and had he the task of reviewing some of the current technical literature relating thereto, there can be little doubt that the English language would be the richer by a number of adjectives of even more incarnadined purport than it yet possesses.

Yet—though a sore trial to the reviewer—the recent outburst of books dealing with the technique of aeronautics is an encouraging sign. It may be taken as a certain sign of faith in the future of Aviation on the part of both authors and publishers, and the latter class at least are usually credited with some degree of foresight. One would feel even more encouraged by their apparent belief that there is, and is likely to continue to be, a public demand for books dealing with aeronautics from a more or less technical standpoint, if they showed a little more discrimination in regard to the quality of the matter which they publish.

Fortunately a very fair proportion of the recent literature on this subject is quite valuable, and most of the rest of it is quite amusing. The trouble in regard to the latter section is that it is apt to fall into the hands of those as ignorant as the authors thereof, and be taken seriously.

An Extreme Case.

By way of illustration one may cite a little work published by Nisbet and Co., Ltd., at the price of 1s. 6d., entitled "The Aviation Catechism." The author, one Major W. T. Blake, R.A.F. has been responsible for a number of utterances in the Daily Press, under the pseudonym of "Wing Adjutant." In his introduction Major Blake states that "The aim of the author has been merely to answer some of the questions which he has found, *after eight years' flying*, are most frequently asked by those who are interested in aviation but have not an expert technical knowledge of the subject."

The italics are not Major Blake's.

The book, therefore, purports to be a guide to those ignorant of aeronautics, and Major Blake in the passage quoted claims inferentially some technical knowledge and explicitly some considerable experience of aeronautics. Internal evidence in the work itself seems to negative both these claims, for it simply abounds in inaccuracies, often of the most misleading and ridiculous nature.

The following samples of the definitions included in a glossary, for instance, do not inspire confidence :—

Balloonette.—A small balloon forming one of the many divisions of the envelope of a rigid airship.

Bracing Wires.—Wires going from top to lower plane and from front to rear of the planes crossing as a St. Andrew's Cross. They are usually placed between the struts, their purpose being to strengthen the machine.

Flying Wires.—Wires going *from top to lower plane in an outward direction* between the struts, crossing with the landing wires. They do not go from front to rear as the bracing wires. *Their object is to carry the weight of the planes whilst in the air. Sometimes called drift or drag wires.*

Landing Wires.—Wires going from *top to lower plane in an inward direction* between the struts, crossing with the flying wires. Their object is to carry the weight of the planes whilst the machine is on the ground. *Sometimes called anti-drift or anti-drag wires.*

It is worth while to take these four definitions and extract in detail the inaccuracies which they contain.

In the first the general impression given is that a ballonette is a gas container, whereas it is actually an air bag. Secondly, ballonettes are characteristic features of the non-rigid type of airship and are certainly unusual in rigids.

The other three definitions show hopeless confusion. Bracing wire is a general term covering all structural wires, but the author attempts to identify it with what are commonly called Incidence Wires.

The description of the direction of flying wires is somewhat vague, but if it conveys any meaning it means that flying wires occupy the position of what are usually called landing wires. The statement that they "carry the weight of the wings" may be merely a clerical error, but the confusion with drag wires is inexcusable.

The landing wire definition gives them the position of flying wires, correctly states the purpose of landing wires, and makes the confusion with anti-drag wires.

Thus in four definitions there are eight definitely misleading statements.

This is a fair sample of the whole work.

From the catechism proper the following sample may suffice :—

"What is meant by inherent stability?

"Certain machines when properly rigged will, if left to their own devices in the air with the engine running regularly, carry on flying perfectly safely in a straight and horizontal direction. Should the engine be switched off, these machines will drop their nose and find their own gliding angle. This is known as inherent stability and the degree to which a machine possesses this quality is known as its *factor of safety.*"

One must assume that Major Blake really knows no better and honestly imagines that he is competent to instruct the unlearned in this matter, but it is extremely regrettable that so utterly misleading and valueless a work should have ever seen the light of day.

AN AMERICAN EFFORT.

"The A.B.C. of Aviation," by Capt. Victor W. Pagé, of the United States Aviation Service, and published by the Norman W. Henley Publishing Co., New York, is a book intended to cover a somewhat similar field to Major Blake's unfortunate lapse. That is to say, that it is designed to give a general idea of the basic principles of flight and of the practical application thereof to the non-technical. This design is carried out very fully and in a manner which calls for little criticism.

The present reviewer, having but a smattering of the American language, hesitates to criticise Capt. Pagé's literary style, but must state that for British students it would be well if certain passages were translated. That, however, is a small affair, and as an instructional handbook for would-be pilots and mechanics the book may be recommended.

AN ITALIAN AUTHORITY.

In the history of Italian aviation the name of Pomilio has a great position. It is probably not yet well known that in 1918, at the invitation of the Government of the United States, the Brothers Pomilio migrated to that country to assist in the production of American aircraft.

During his residence in that country Signor Ottorino Pomilio has delivered himself of a volume entitled "Airplane Design and Construction."

In this volume the whole subject of aeroplane design and construction is dealt with in an extraordinarily compact form—too compact a form to some extent. The aerodynamic side of the question is handled according to the graphic logarithmic scale method originated by Eiffel—an extremely elegant and very illuminative method which has received too little attention so far in the English-speaking world.

In fact the whole work may be regarded as an essay on the application of graphic methods to the solution of the aerodynamic and structural problems of aeroplane design. It contains nothing of new facts, but is a very clear and lucid exposition of one particular designer's methods, and should be in the hands of all aeroplane designers. Even if it teaches them nothing new it should provide a certain amount of mental stimulus.

"Airplane Design and Construction" is published by the Hill Publishing Co., London, and the price is 30s. net.

STRESS MERCHANTS.

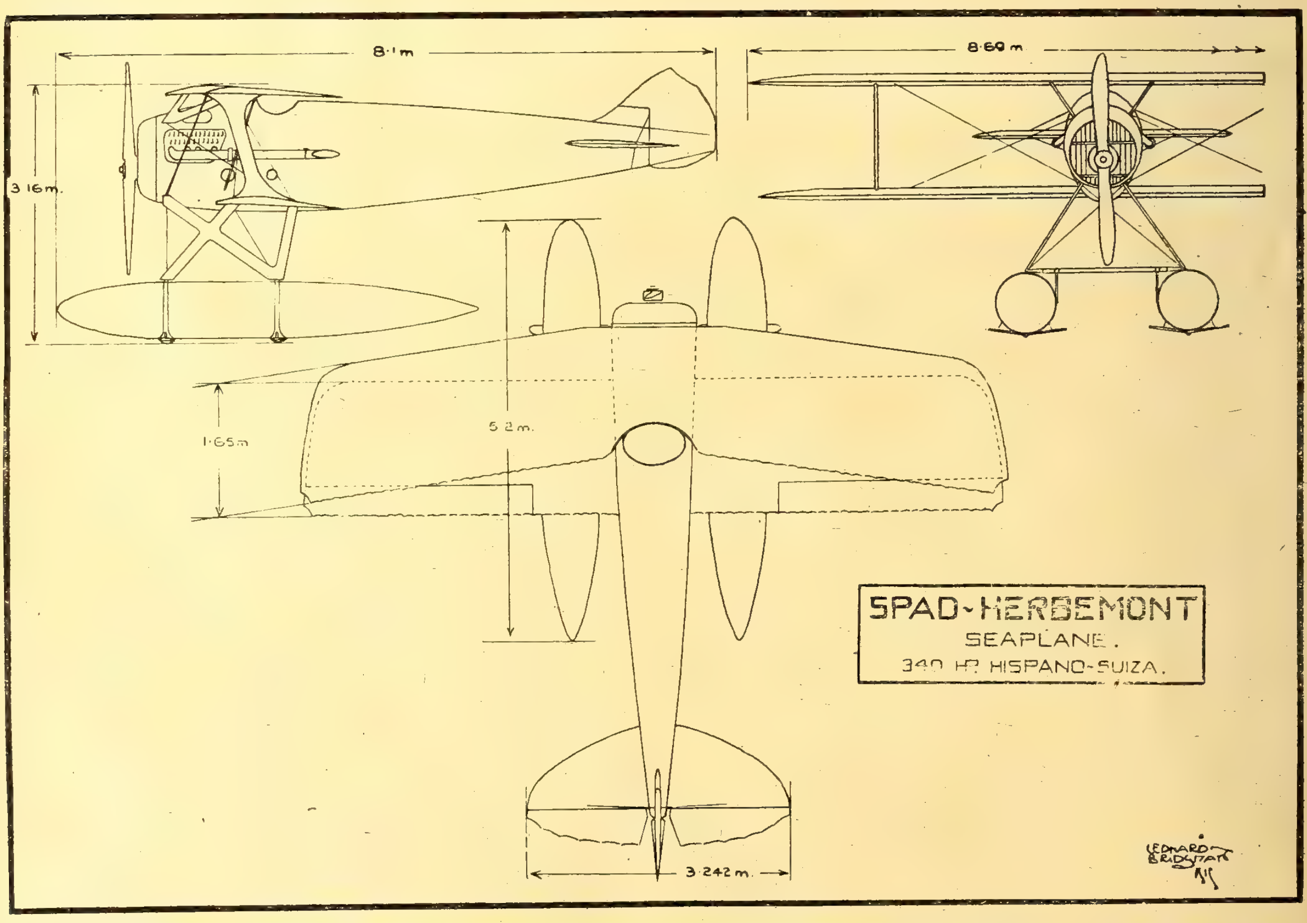
During the late war most British aeroplane designers came into contact, at one time or another, with the official stress merchants of the Air Department, Admiralty, or of the Department of Civil Aeronautics, and their successors of the Air Board, and the Air Ministry.

Doubtless their feelings as to these conflicts are by now somewhat assuaged, and in any case they will realise that the experience gained in the departments concerned in this particular matter is enormous and that its publication cannot but be of immense value.

In "Aeroplane Structures," Mr. A. J. S. Pippard, M.B.E., M.Sc., and Capt. J. L. Pritchard, late R.A.F., have collected into a volume of 300 odd pages the results of their experience, during the war, in checking the structural strength of experimental aircraft. The subject is dealt with very thoroughly and, as a complete discussion of the loads which an aeroplane may have to bear in flight, involves a fairly close study of aerodynamics, the book might almost be called a handbook of aeroplane design, except for the absence of performance data.

The detail design of parts and fittings are dealt with in a very thorough manner, and the book is one which no aeroplane designer can afford to do without.

The book is published by Longmans, Green and Co. at the price of 2s. net.—W. H. S.



The scale drawing reproduced above shows the Schneider Cup Spad machine as it was intended. The machine which actually appeared at Bournemouth had cut down top wings and pontoon type floats, and was fitted with extra chassis struts to the outer side of each float. The streamline floats, fitted with hydrovanes, shown above, have possibities for very high-speed machines, and it would be interesting to hear why they were not used.

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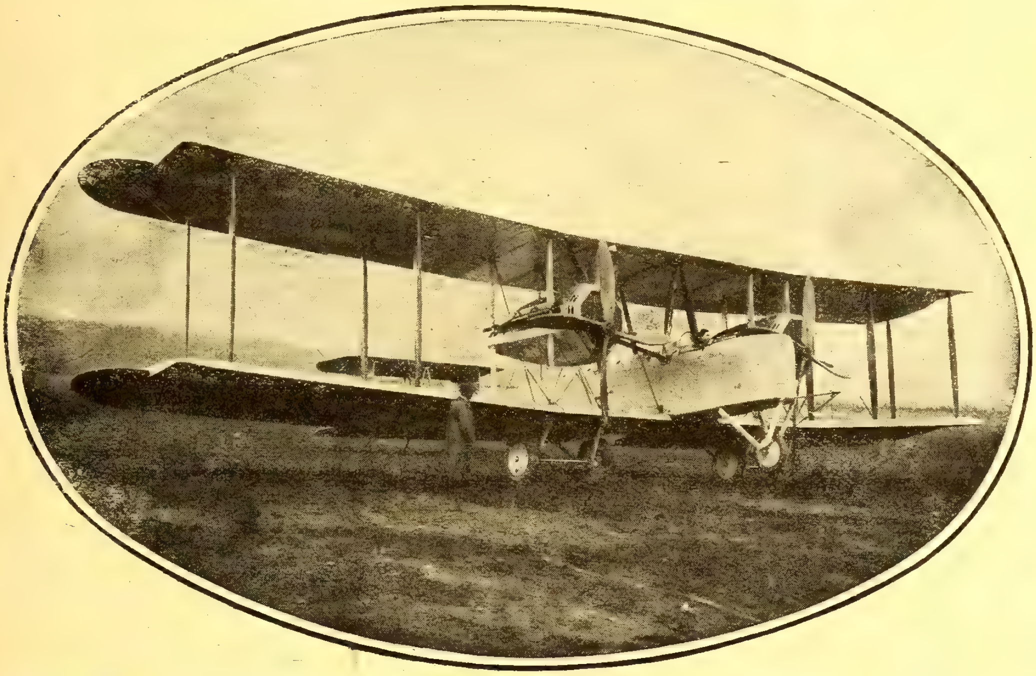
"VICKERS - VIMY - ROLLS"



The first direct Flight from Newfoundland to Ireland (1,900 miles) was accomplished by this Aeroplane in 15 hrs. 57 mins. 4 tons of Petrol and Oil were used.

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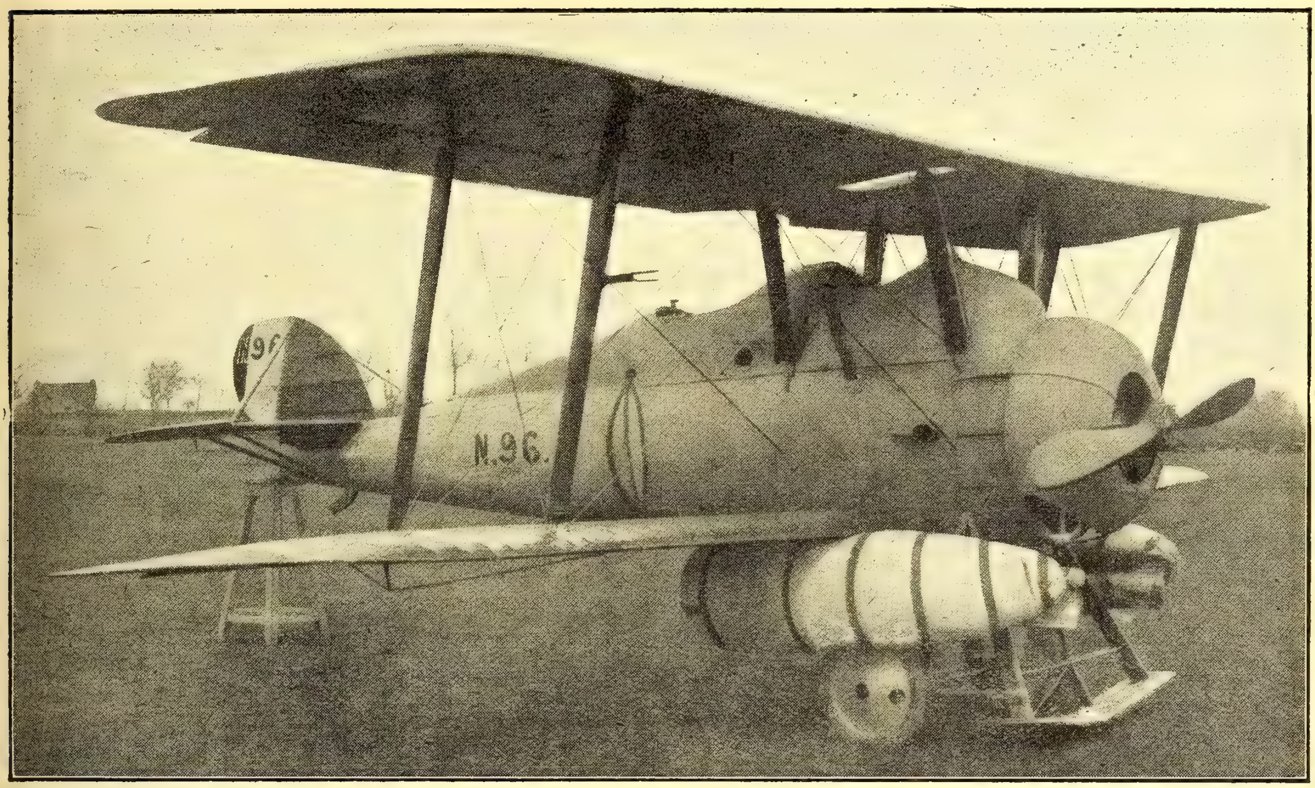
MODERN BRITISH AEROPLANES.

XXI.—Parnall and Sons.



The Parnall "Panther" (200 h.p. B.R.2) showing the hydrovane chassis and the airbags inflated.

Parnall and Sons before the war were a well-known firm of shopfitters and cabinet-makers. During the war they embarked on the manufacture of aircraft and turned out many machines to official specification. During 1917 Mr. H. Bolas, of the Air Department, Admiralty, was released to act as the firm's chief aeroplane designer, and was responsible for the "Panther," the only one of the firm's own design of which any information is available. The proprietors of the firm are W. and T. Avery, Ltd.

THE PARNALL "PANTHER."

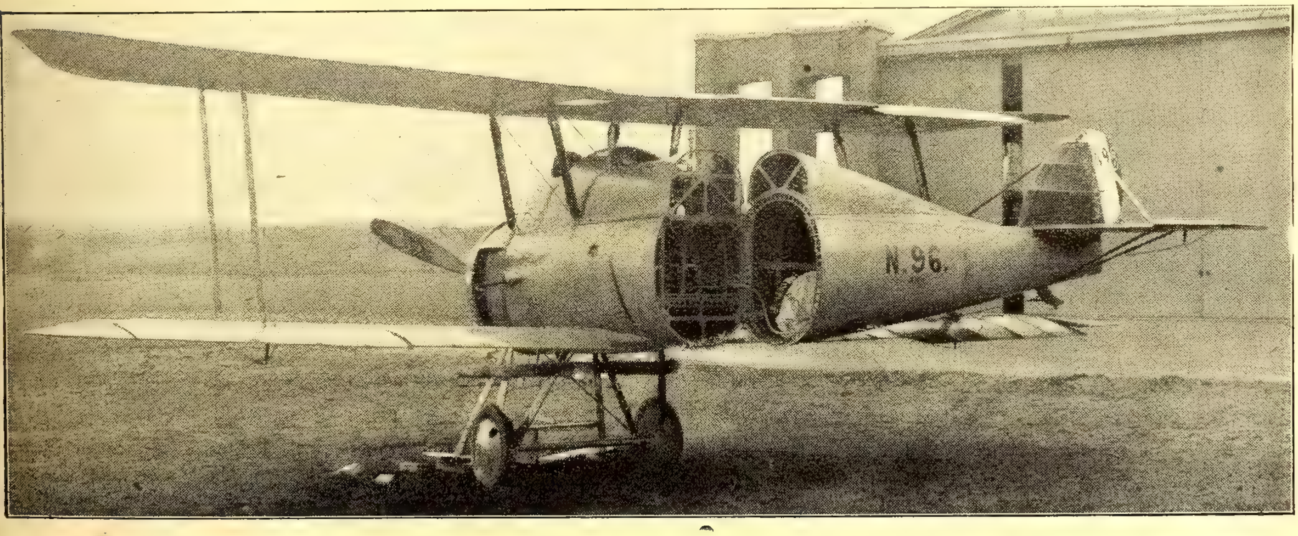
The "Panther" is a two-seater reconnaissance ship-plane presenting many unusual features.

The fuselage is a three-ply and bulkhead affair devoid of wire bracing and arranged to fold just aft of the observer's seat. The two cockpits—pilot under the centre section and observer aft—are within an enormous hump built up from the upper part of the fuselage.

At the rear end of the fuselage the tail is carried, as is customary, but the tail plane is built in a lozenge plan form in such wise as to lie snugly alongside the interplane struts when folded for stowage.

Balanced elevators of very considerable area relatively to the fixed surface, are carried.

The machine is fitted with the "Grain" type of emergency flotation gear, consisting of a hydrovane buffer carried ahead of the landing wheels, allowing the machine to alight on the water, together with a wheel releasing gear to avoid the upsetting effect of wheels when so alighting, and a pair of air-bags normally stowed in a deflated condition along the side of the fuselage and extending from the lower plane rear spar to just behind the airscrew. When about to alight these air-bags are inflated from the pilot's cockpit, the wheels are released, and the machine alights on the hydrovanes and gradually sinks till the air-bags support her.

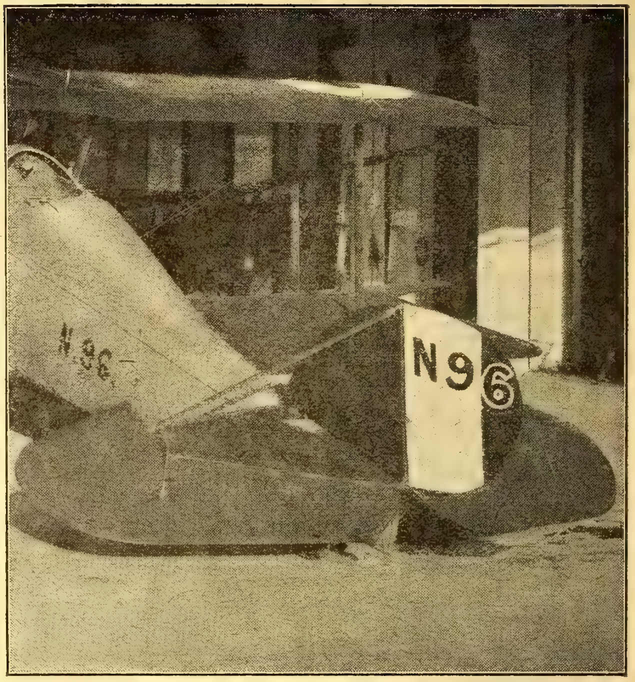


The Parnall "Panther" (200 h.p. B.R.2) showing the fuselage folded to facilitate stowing. The horizontal rods on the undercarriage are the stowed airbags.

The following specification gives the general dimensions and performance of this machine :—

SPECIFICATION.

Type of machine	Two-seater reconnaissance ship-plane.
Name of machine	Parnall "Panther."
Span	29 ft. 6 in.
Gap	6 ft. 3 in.
Overall length	24 ft. 11 in. (folded, 14 ft. 6 in.).
Maximum height	10 ft. 6 in.
Chord	6 ft. 3 in.
Total surface	336 sq. ft.
Span of tail	12 ft.
Area of tailplane	18.4 sq. ft.
Area of elevators	19.3 sq. ft.
Area of rudder	4.4 sq. ft.
Area of fin	6.85 sq. ft.
Area of ailerons	11.3 sq. ft. each; total, 45.2 sq. ft.
Maximum cross-section of body	14.5 sq. ft.
Engine type and h.p.	B.R.2, 210 h.p at 1,300 r.p.m.
Airscrew	dia., 2.775 metres; pitch, 2.416 metres.
Weight empty	1,420 lb.
Disposable load, excluding fuel	630 lb.
Total weight loaded	2,560 lb.
Tank capacity hours	4.8 hrs. at 100 m.p.h. at 2,000 ft.
Tank capacity gallons	petrol, 58; oil, 10
PERFORMANCE—	
Speed low down	122 m.p.h.
Speed at 6,000 ft.	116 m.p.h.
Speed at 10,000 ft.	111 m.p.h.
Landing speed	40 m.p.h.
Climb—	
To 6,000 ft	6 min. 3 sec.
To 10,000 ft.	12 min. 29 sec.



The Tail Unit of the Parnall "Panther."

THOSE TROUBLESOME NUTS.

Everybody who has had anything to do with internal combustion engines, whether on aeroplanes, cars, or motor-cycles knows that practically every vehicle so driven suffers from the trouble of shedding nuts at unexpected and inopportune moments. Naturally the higher the class of the vehicle the less nuts are likely to fall off, so that it is not every machine to which applies the jest that the makers give away a squirrel to each purchaser, the function of the said squirrel being to run behind and pick up the nuts.

At the same time, the best of workmen and the best of screw-cutting are not guarantees against this disease, which is naturally particularly dangerous in aircraft. Many means have been tried to cure it, the most popular being ordinary spring washers or castellated nuts with split pins. The former depend very largely on the human element in fitting, and the latter are clumsy, unsightly, unreliable and, above all, extraordinary wasters of time and material in fitting.

It is, therefore, the more surprising that all users of such vehicles do not insist on their being fitted with some really reliable nut-fixing agent, such as the "Fastnut" washer, which is now used as a standard fitting by forty railway companies, over sixty colliery companies, and by the London General Omnibus Company. Nothing gets a worse gruelling that does a motor 'bus, and the satisfactory nature of the "Fastnut" washer is proved by the fact that contracts totalling upwards of 1,000 gross monthly of "Fastnut" washers are being absorbed in the manufacture or maintenance of motor 'buses. The figure seems pretty large, but one has the word of Brown Brothers, Limited, for the statement, and as Brown Brothers are the sole agents for "Fastnut" washers for the Aircraft Industry and the motor trade, and as one has known Bown Brothers, Limited, for more years than one cares to remember, one accepts the statement unhesitatingly.

Apart from the fact that the "Fastnut" washer is actually far more reliable and far less trouble than a castellated nut and split pin, it is a great deal preferable in that it saves the excessive length of nut and bolt necessary for the fitting of the split pin. Also with a "Fastnut" washer a bolt locks up wherever it is put so that it is never necessary to strain the bolt by wrenching the nut round an extra seventh or eighth of a turn so as to bring the castellation opposite the hole for the split pin.

Taking it all round, therefore, the "Fastnut" washer works out cheaper in labour and material than any of the ordinary standard methods of fixing. The chief engineer of the United Legal Indemnity Insurance Society, Ltd., writes that, as the result of tests, he is now prepared to make a reduction in the premium for insurance of all engines, etc., fitted with "Fastnut" washers. This is a point which might be very well worth considering by makers and owners of commercial aircraft.

Although it is very seldom that a British aeroplane falls to pieces in the air, one has heard of involuntary descents caused by the disappearance or slackening off of important nuts, and as the rate of aircraft insurance is still pretty high it might be well to consider the use of "Fastnut" washers as an inducement to lowering premiums.

A NOTABLE ACHIEVEMENT.

In connection with the aerial service between London and Amsterdam two sets of aeroplane landing-wheels and tyres to suit the special conditions of the Dutch landing-grounds were required in a hurry.

The Palmer Tyre, Ltd (who, it will be remembered, made the landing-wheels and tyres of every bombing and fighting aeroplane that left these shores during the Great War), did not happen to have this particular type in stock in London at the moment, but with their usual enterprise immediately got into touch with their Paris house.

The tyres were handed over to the Paris representatives of Aerial Transport and Travel, Ltd., brought over to London by the next Airco machine, and within five hours these landing-wheels and tyres were ready for fitting to the British Aerial Transport Co.'s machine waiting to proceed to Amsterdam.

TO PATENTEES AND EXPERIMENTERS.

Mr. H. A. Sturch, A.M.I.Mech.E., A.M.I.A.E. (late of the editorial department of "The Car"), has now entered into partnership with Mr. John Walker, and the partners are opening a business as consultants and patent agents with offices at Kenilworth Road, Berkswell, Coventry.

They are prepared to assist in the designing and in the production of the component details of steam-engines, cars, commercial vehicles, pumps, aeroplane engines, etc., and to produce drawings and high-speed tracings under rush conditions. They will doubtless be found useful by firms engaged on experimental work.

CARRYING ON.

It is good to note that at least one firm is going to continue its passenger flights during the winter months. It is the Supermarine Aviation Works, of Southampton, which states that the policy of deciding to carry on during what would ordinarily be called "the off season" will show the public that civil aviation, as far as flying boats are concerned, can be carried on throughout the whole of the year.

A NEW ASCOL COMPANY.

Mr. G. H. Mansfield is about to form two companies, one to be known as the Ascol Company, to deal in motor accessories, aircraft goods, etc., and the other to be known as G. H. Mansfield and Co., to deal with export business. An agreement has already been entered into for doing business in India.

The trade-mark "Ascol" and the goodwill from the liquidators of the old company have been purchased by Mr. Mansfield. As a temporary measure one of the first-floor flats in Ascol House has been taken over for use as offices.

B.T.H. Magnetos

were used on the first Airship to cross the Atlantic—**Naval Airship R.34.**

B.T.H. Magnetos were used on the aeroplanes which won the first and second prizes in the Aerial Derby.

B.T.H. Magnetos were used on the aeroplane which secured the British altitude record.

B.T.H. Magnetos were used on the aeroplane making the first non-stop flight, London-Madrid.

B.T.H. Magnetos were used on the aeroplane whose speed established a British record for a closed circuit.

These Magnetos have a high reputation amongst pilots for reliability, and are all-British in design and workmanship.

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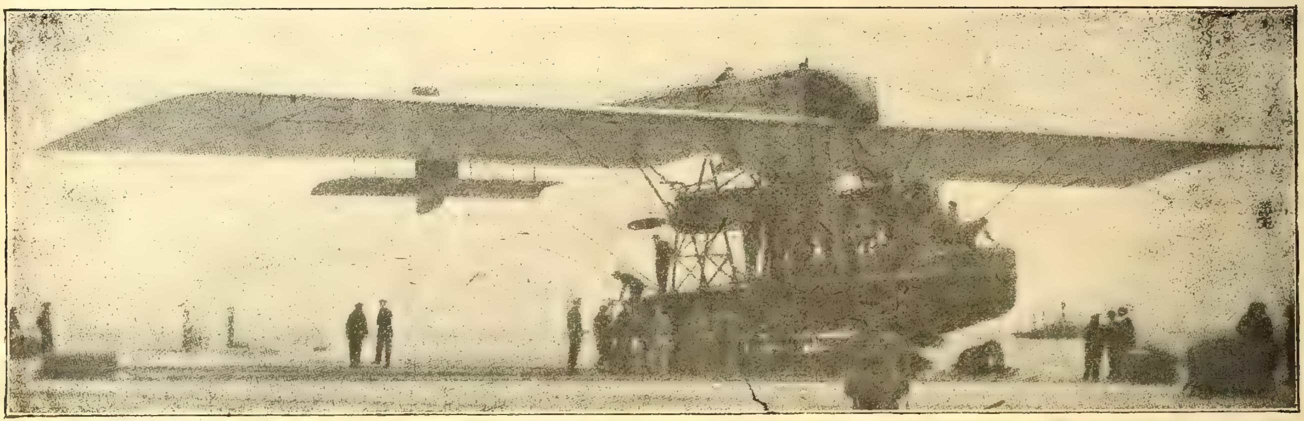
THE ZEPPELIN-LINDAU GIANT MONOPLANE FLYING-BOAT.



The Zeppelin-Landau Giant Sea Monoplane (four 260 h.p. Mercédès engines).

The following information of the German giant naval aircraft is extracted from an article by Herbert Martin in the last issue of the German "Motor," on "The Position of the German Naval Air Service at the Signing of the Armistice."

"The giant aircraft of the Navy were turned out by the Zeppelin works at Staaken-by-Spandau and at Lindau-on-Bodensee, the former being of the well-known land-going type, equipped with four 260-h.p. Mercédès motors in two interplane power eggs (combined tractor and propeller screw drive), and provided with two long narrow floats. No specimen reached the active service stage before armistice was signed.

"Fuel was carried for 10 hours' flight at full power with all engines with a speed of 125 km. per hour, and after four to five hours' flying the aircraft could remain in the air on three engines. The armament consisted of three guns, one being arranged in the nose of the fuselage and one above each engine nacelle in the top plane. The two-centimetre aircraft gun was mounted aft in the fuselage on a swivelling gun-ring. The wireless receiver and sender were arranged in a special compartment aft, which was fitted with a collapsible wireless mast which enabled the aircraft to send messages when resting on the water.

"The monoplane naval aircraft turned out by the Zeppelin-Lindau works (first illustrated in The Aeroplane of Dec. 25th last, and in some Allied references called the 'Dornier' model) showed a better performance and improved flying qualities, giving a speed, with full equipment and carrying fuel for 10 hours' flight, of 145 km. with all four engines running at full power, and when three-quarters of the fuel was consumed the aircraft could fly at low height on two engines, thus extending the duration considerably beyond 10 hours.

"The weight of the Zeppelin-Lindau naval aircraft that has successfully passed the seaworthiness tests, amounts to 10 tons compared with 12 tons for the Zeppelin-Staaken model.

"The fuselage was raised above the plane, somewhat similar to the Ursinus biplane.

"The wireless compartment, with receiving and sending plant and mast, is in front, followed by a swivelling gun-mount. The single float may perhaps better be termed a flying-boat, and was made of duralumin, having in the bow an aircraft gun-mount, followed by the pilot's cockpit and fuel tanks. In the stern of the boat is another gunner's cockpit. On either side of the boat two engines were carried in engine nacelles, resting on A-struts and driving tractor and a propeller airscrew. The 260 h.p. engines could be repaired during flight and admittance to the top fuselage was by means of a rope ladder.

"The crew of both types of Zeppelin giant naval aircraft numbered five men. When the war ended improved editions of these models and new types were under construction, but work was stoppel by the Government Departments in question, as no need then existed for their employment in the sphere for which they were designed."—Hi.

AEROPLANES TO THE RESCUE OF THE MOTOR TRADE.

Owing to the recent strike, the Warland Dual Rim Company found that the material they had forwarded for their display at the Paris Show had not arrived.

It was necessary, therefore, to charter the aid of an aeroplane, and arrangements were made with the Airco Company and all the material was handed to them at 10 o'clock in the morning. At five the same evening the stuff was delivered to its destination. A telegram which was dispatched at the same time, advising their agent of it having left, arrived some 2½ hours after the goods.

Aviation is playing a more important part in industry every day.

A POWERFUL ALLIANCE.

The interesting announcement is made that Handley Page, Ltd., have been appointed sole agents for the sale of Triplex Safety Glass in India, Australia, New Zealand, and South Africa. All inquiries relating to Triplex glass business in the aforementioned countries should therefore be sent to Handley Page, Ltd., at Cricklewood, and not to the Triplex Company.

From this it is evident not only that Handley Page, Ltd., are extending their activities in various directions besides that of merely selling or operating aeroplanes, but that those responsible for the firm know a good thing when they see it.

EQUIPMENT WAREHOUSES.

The Aircraft Materials and Equipment Corporation of New York have completed arrangements whereby they become distributors in the United States of spare parts for Canadian training aeroplanes. These machines were used by the R.A.F. in Canada. Several hundreds have been sold for commercial purposes throughout the country.

The corporation have leased a large warehouse in New York. A complete stock of parts for engines as well as aeroplanes will be kept. A comprehensive catalogue has been published.

A plan has been worked out whereby parts will be sent off on the same day that the order is received. This was done because commercial users of aeroplanes cannot afford to keep their machines laid up for indefinite periods while they are obtaining new parts.

A branch warehouse has been opened at Chicago, and as soon as arrangements have been made another will be opened in San Francisco.

A NEW COMPANY.

W. D. Oddy and Co.—Private company. Registered Sept. 25th. Capital, £25,000 in £1 shares. To carry on the business of manufacturers of aircraft, heavier- and lighter-than-air machines, propellers and airscrews and accessories, etc., appertaining to aircraft. The subscribers (each with one share) are:—W. D. Oddy, 47, Gledhow Wood Grove, Roundhay, Leeds, engineer; R. Blackburn, Rowcliffe, Boston Spa, engineer. The first directors are: W. D. Oddy and R. Blackburn (both permanent). Qualification £100. Registered Office: Propeller Works, Globe Road, Leeds.

The excellent work done by Mr. Oddy's firm in its original form during the war will be remembered. Oddy airscrews then attained a high reputation which one feels sure the new firm will maintain.

A PRESENTATION.

At a social evening of the staff of the Lang Propeller Works, held on Oct. 9th, Mr. C. A. Laing, the works manager, and his wife were the guests of the evening, and were presented with a handsome clock and an illuminated address in recognition of their silver wedding.

To "Aeroplane" Subscribers.

During the past three months the "AEROPLANE" has offered to yearly subscribers the right to purchase copies of "FLYING COLOURS," McCudden's "FIVE YEARS IN THE R.F.C.," Richthofen's "RED AIR FIGHTER," and Gill's "THE AERIAL ARM" at half-price.

Subscribers have freely taken advantage of the opportunity, but several have pointed out that they already have these books, and are therefore debarred from participating in the privilege.

In order to meet their views the "Aeroplane" is prepared to extend the offer. Any books published by the "Aeroplane" and General Publishing Co., Ltd., to a value not exceeding £2 2s., will be sent to yearly subscribers for half the published price.

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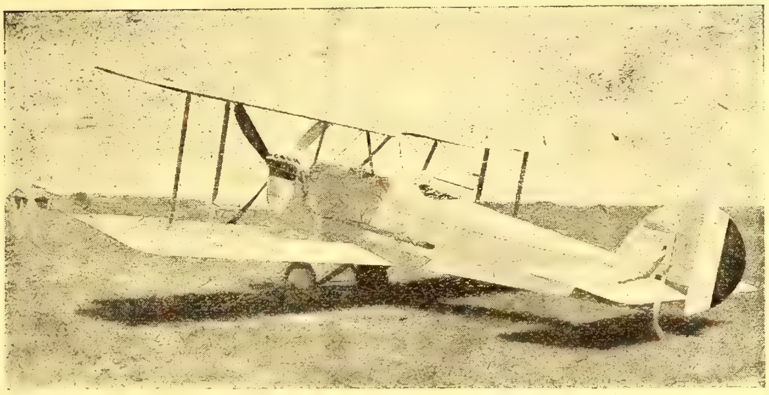

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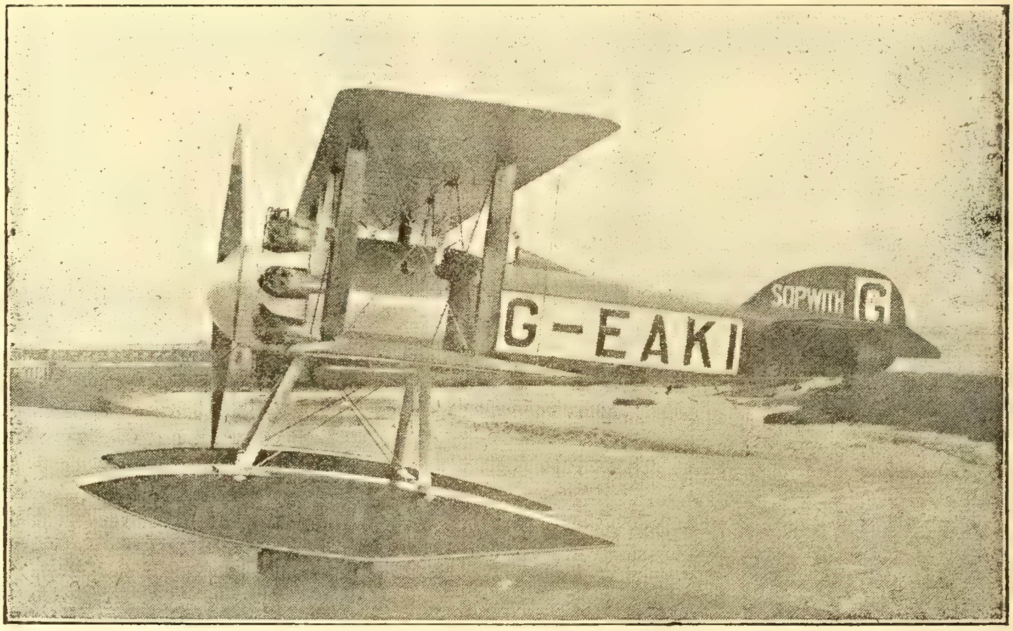

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With an Introduction by

Major-General Sir W. SEFTON BRANCKER, K.C.B., A.F.C.

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    - Appendix A. Tabular Statement of the several types of clouds.
    - Appendix B. The Beaufort Scale.
- II. Airships.
    - Appendix A. British Airships.
    - Appendix B. French Airships.
    - Appendix C. Italian Airships.
    - Appendix D. German Airships.
- III. The Aeroplane.
    - Appendix A. The Construction of Planes.
    - Appendix B. Under-Carriages.
- IV. Progress in Aeroplane Design.
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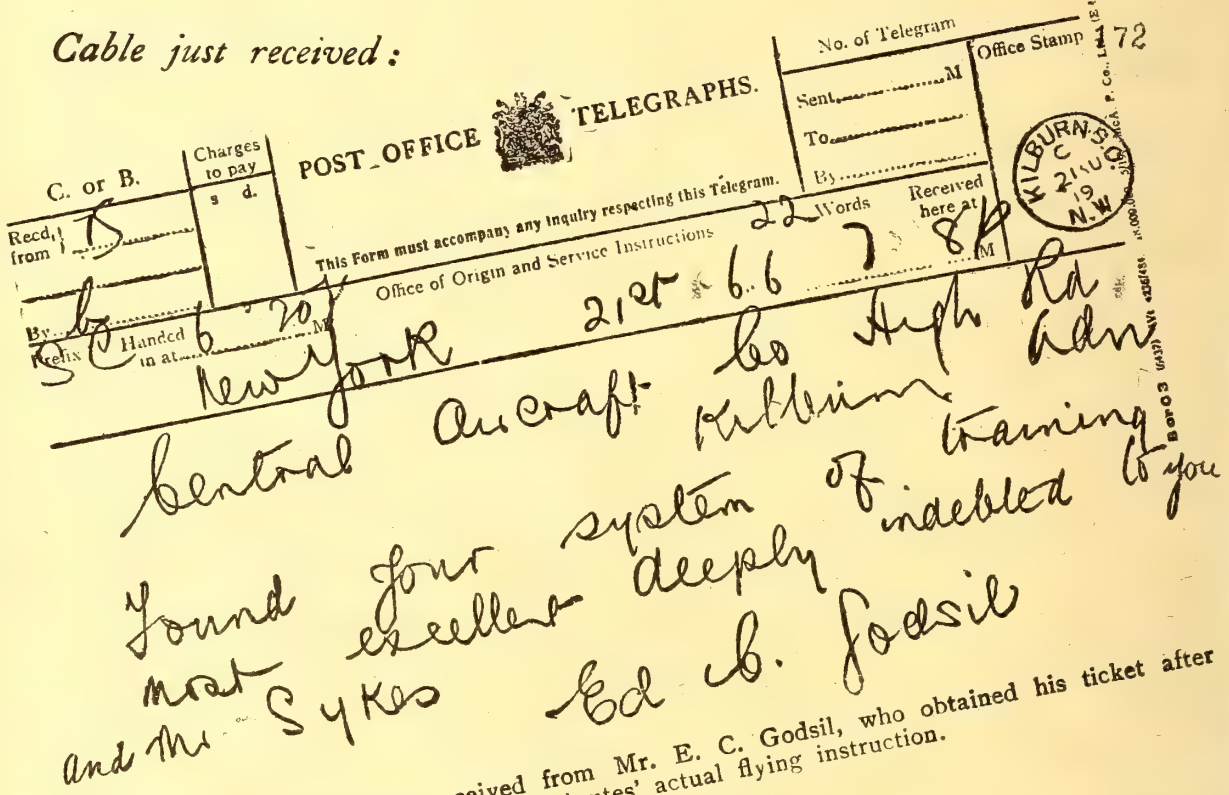

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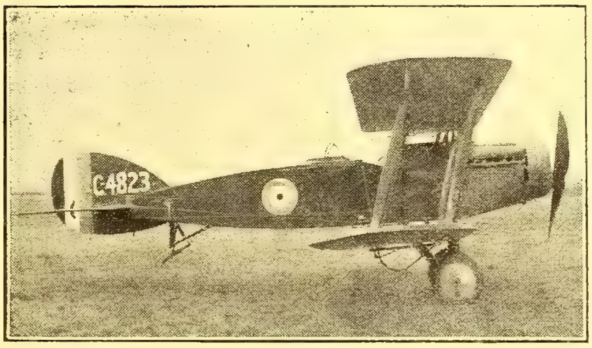

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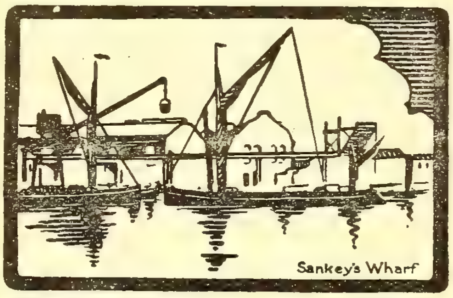

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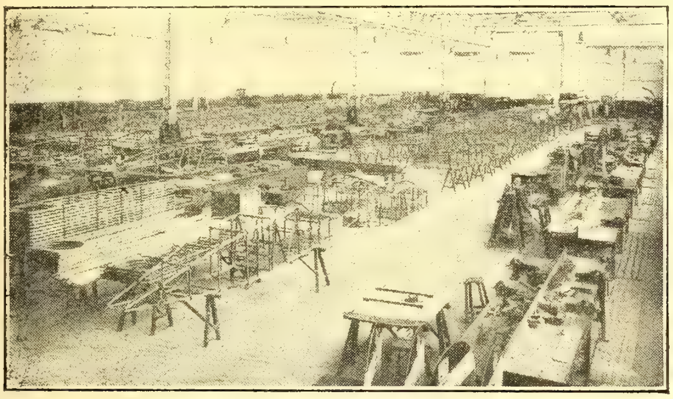

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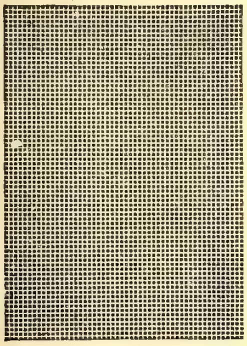

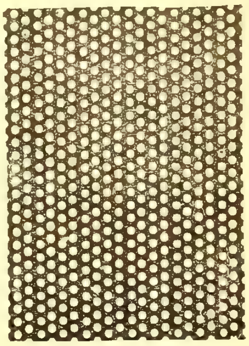

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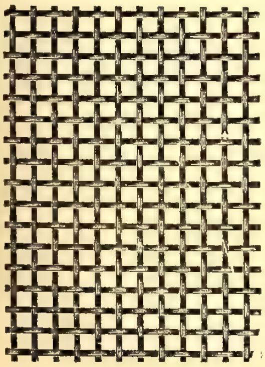

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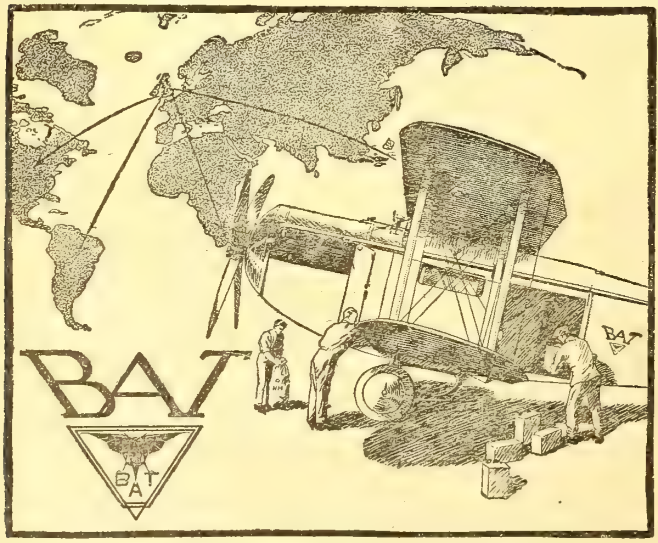

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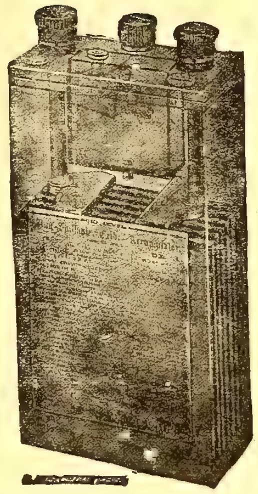

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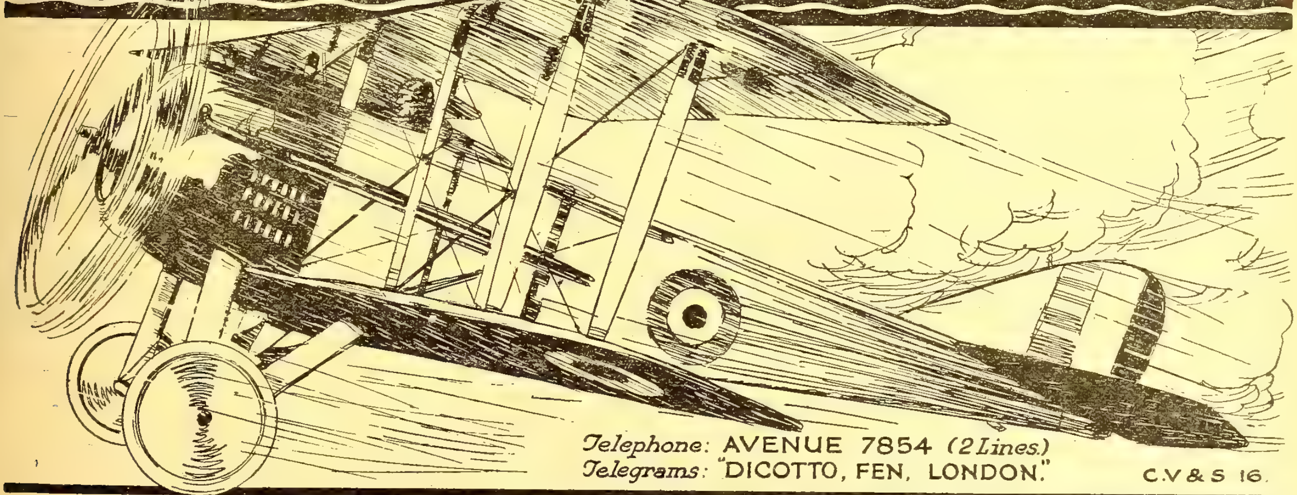

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FRENCH AIRSCREW PRACTICE DURING THE WAR.

By JOHN STRONG.

French airscrew practice varied very little from British methods either in design or manufacture, and although quite a large number of patents were taken out during the war only types designed previously were in general use, such as the Chauvière, Lumière, Ratmanhof, Ratier, Levasseur and Régy. For all-round efficiency the Lumière showed up particularly well.

The attached diagram comparing the blade widths of typical British, French, American, Italian, German, and Austrian airscrews is instructive.

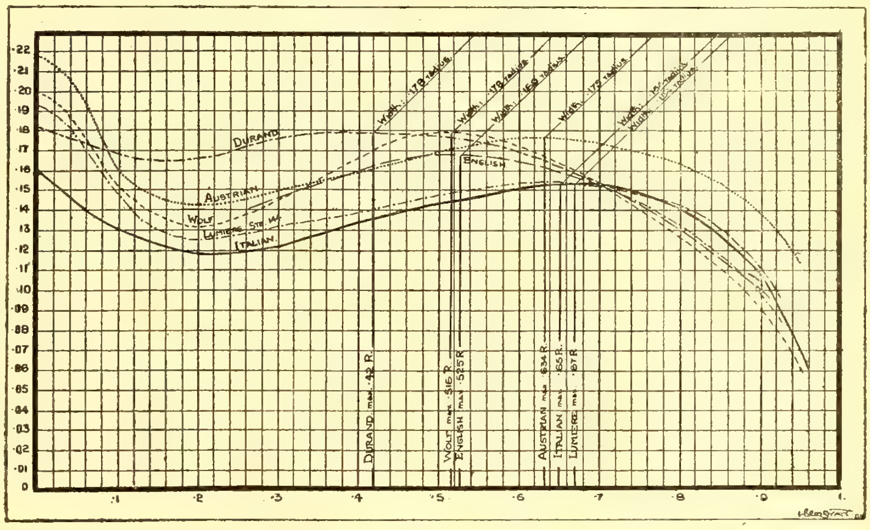


Diagram showing blade width in relation to radius for typical British, French, Italian, American, German and Austrian Airscrews.

TIMBER TREATMENT.

With the exception of the Valéri and de la Grandville systems, 1 in. boards were invariably used for the laminations.

The timbers allowed were the same as in England, but the same amount of old, naturally dried stock was not available, and so the timber was invariably either wet or dry kilned. Elm and beech were treated with Capt. Otto's ozone process, which consisted in alternately passing pure air and ozone-charged air through the kiln at a comparatively low heat.

Kilned timber was usually cut into 27 mm. planks and allowed to stand for a month before using. The planks were then brought into the drying-room and stocked until required. The timber thus acquired the working temperature of the shops.

AIRSCREW WOODS AUTHORISED.

FOR WAR SERVICE.—European walnut, American walnut, beech, mahogany (true), elm, ash, Ban-lang.

FOR SCHOOL MACHINES.—Honduras mahogany, Cuban (tobacco) mahogany, birch (Canadian), African walnut.

AUTHORISED, BUT NOT IN USE.—Oak (Querous Robur), Grand Bassam (mahogany).

MANUFACTURING METHODS.

The planks were slightly warmed in an oven and then planed down to 22 mm. thickness, marked out for the laminations, and roughed out to shape and the preliminary centre hole drilled. The shaped laminations were roughed with a toothed plane.

When building up the blocks great care was taken to balance individual laminations. This made the final working-up very simple.

The blocks were then glued up, either hot glue (Lyons and Givet) or casein were used. The casein was preferred officially. Top and bottom gluing boards were used as illustrated, and this allowed four or six blocks to be put into one press, thus economising floor space.

SHAPING.

After taking the block from the press the centre hole was bored to size, and then the block was clamped onto a jig and the blades spindled to the exact profile as seen in plan. While on this jig the boss was also roughed out on another vertical spindle with a concave cutter.

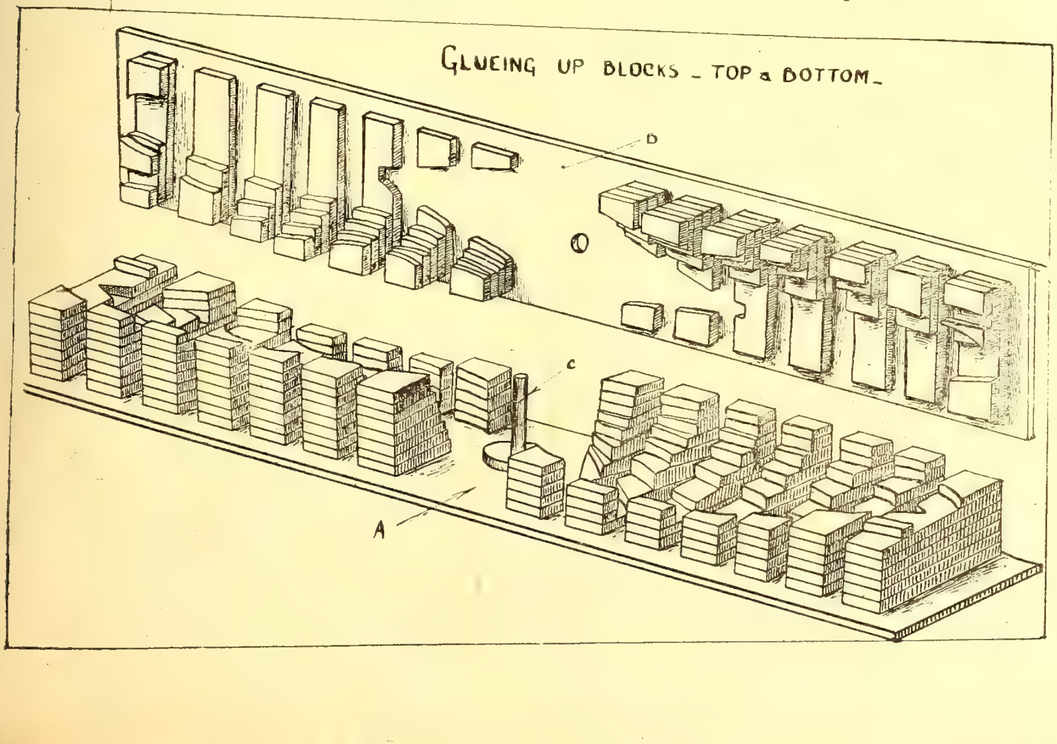
The next operation was facing up the boss, for which a drilling machine with a special cutter was used.

The block was afterwards roughed out on a band saw, for which operation an average workman took about 20 min. for the two blades, both back and face. No marking out was necessary. A succession of cuts were taken until only just the corners of the steps were left in. This only left about 2 mm. to be shaped by hand.

The next operation was shaping out the face and setting the pitch. This was usually done by hand, but in the Lumière shops an ordinary overhand planing machine and a box-jig were used.

The pitch was then initially verified on the test bench and the first cuts taken at the usual sections and verified by templates. The back of the blade was subsequently shaped by hand, using the section cuts as guides. The airscrew was then finished back and face and balanced, either knife-edge or ball-bearing stands being used, and cone mandrels. The bolt-holes were drilled to templates as usual, 1-2 mm. clearance being allowed.

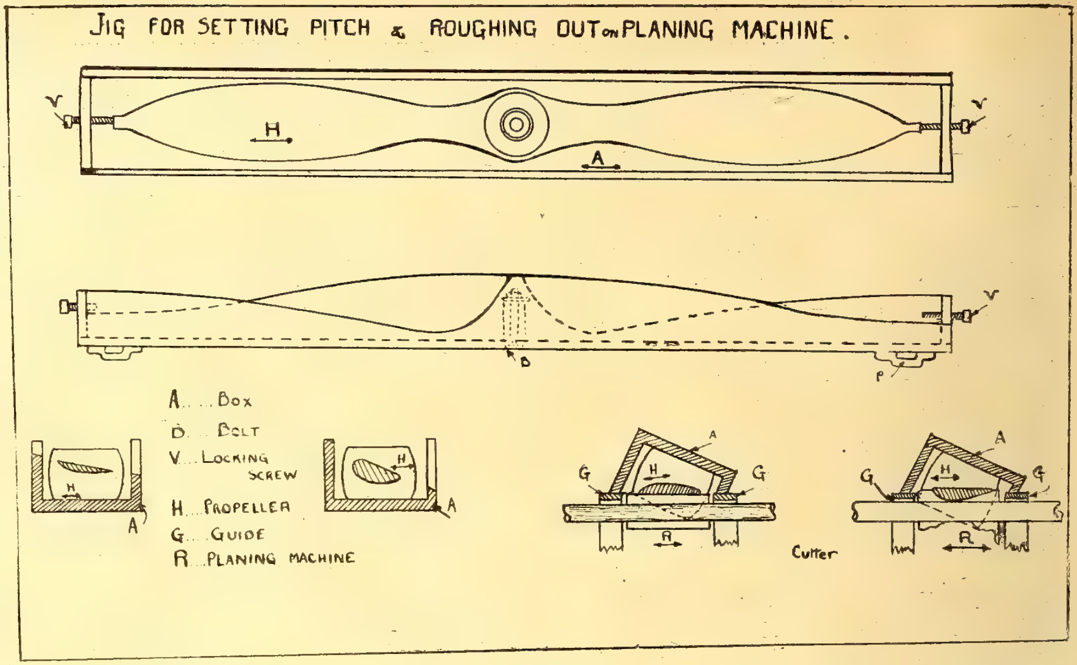
The finished airscrews were afterwards either stained and varnished or lacquered.



The average time taken for hand-shaping after the roughing out on the band saw was less than six hours, and exceptional men only took 2½ hours. Piecework was usual. The labour per airscrew from planing down the planks to final inspection was invariably less than 30 hours, and the workmanship was excellent throughout.

SHAPING MACHINES.

Shaping machines did not come into very general use, as all the British and American machines available cut across the blade and took longer than hand-shaping. An exceptionally good machine was produced by Mr. Wasmer. This shaped


JIG FOR SETTING PITCH & ROUGHING OUT ON PLANING MACHINE.

along the blade instead of across it, cutting two at a time, and taking 10 min. per face per blade.

Another good reproducing machine, which also cut along the length of the blade, was the Selmersheim, which is illustrated.

Other Methods.

Eclair.

Timber. — Walnut, mahogany, birch, elm, beech.

Dryness of Timber.—As delivered by French Government and then subjected to tests for humidity. It must not contain more than 15 per cent. or less than 10 per cent.

S.F.A. Timber Inspection.—The Service de Fabrication Aéronautique is equivalent to the British A.I.D. A sample of timber from each batch is sent to S.F.A. having the thickness and width of the laminæ and at least 150 mm. (roughly 6 in.) long.

Heated Chambers.—These are large enough to contain sufficient laminæ for six days' work ahead. Hot, dry air is used (hot damped air is not allowed). Artificial ventilation is employed.

Temperature in Works.—Is never below 65 deg. Fahr. or above 75 deg.

Glue.—Lyons and Givet mixed hot glue or casein if specified.

Period Under Clamp.—Three (3) laminæ under clamps 6 hours; then the two blocks of three laminæ glued together for 6 hours.

Period Before Roughing.—Roughing out is done on band saw, one skilled man roughing 50 airscrews per diem to within 2 to 3 mm. of final. This is done not less than three days after release from clamps.

Period Before Final Shaping.—Twelve days after roughing out the block goes to final shaping, giving 15 days in all after release from clamps.

Centre Bore.—No paint or varnish. Bored a tight push fit.

Bolt Holes.—No paint or varnish. Bored + ½ mm.

Varnish.—Woodfiller, three coats varnish, pumice, French polish, and alternatively lacquer finish.

Levasseur.

Timber Used.—Walnut, mahogany, beech, elm.

How Dried.—Kiln and in heated rooms.

Temperature in Works.—65 deg. to 70 deg. Fahr.

Gluing Room.—Only kept warm by the tables used for heating laminæ, with the result that in the morning in winter the gluing room is rather cold.

Hot Glue Used.—The glue is specially made for Messrs. Levasseur, and is their trade secret. The boards are brushed over with formalin before gluing.

Assembling.—A board 65 mm. thick by 180 mm. wide is used on which the laminæ are applied, and then the whole is clamped by four-sided clamps having three wooden adjustment screws on the top.

Gluing en Bloc.—They apply glue to both sides of laminæ and clamp up the seven or eight laminæ *en bloc*.

Period Under Clamps.—The block is left only 4 *hours* under clamps. They sometimes rough off at once, but usually after 10 or 15 days, and then finish. But the block is always left 15 days between release from presses and final shaping.

Band Saw.—Roughing off is done by one man on a band saw to within 3 mm. of final dimensions—for this the man must be both skilled and efficient.

S.F.A. Inspection.—Examined in the white, directly airscrew is out of shaper's hands, and again after varnishing, as is usual in France.

Finish.—Woodfiller, three coats varnish, and French polish. Recently they were lacquered only.

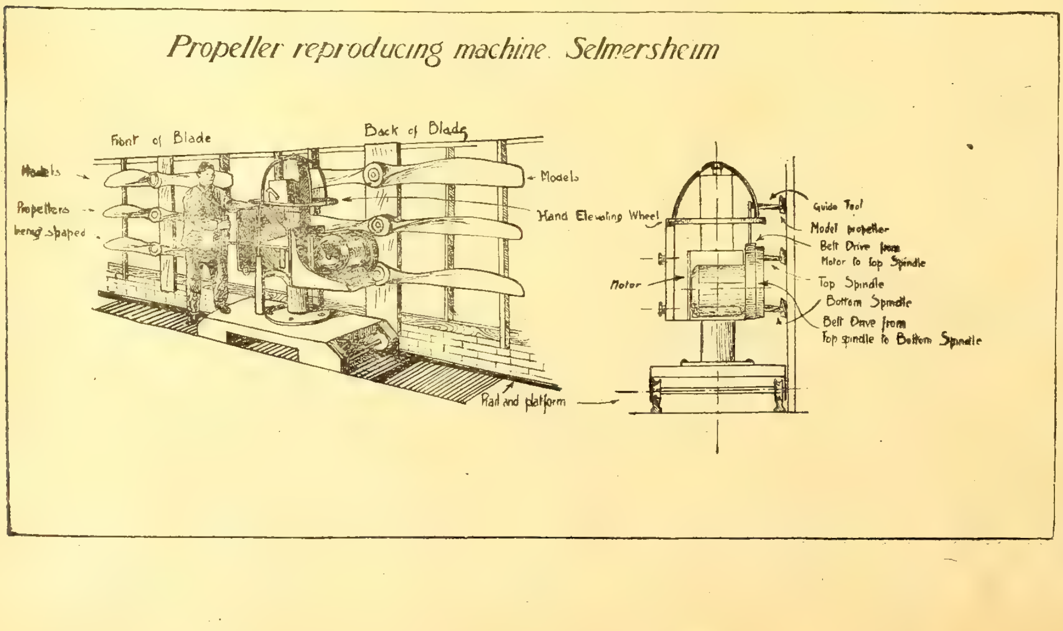
Centre Bore.—Push fit. No paint or varnish.

Bolt Holes.—Plus ½ mm. No paint or varnish.

Tipping.—De la Grandville pig-skin tips or ordinary metal tips, following usual French practice.

Regy.

Timber.—Walnut, South of France walnut, mahogany, beech (mostly ozone kiln dried).


Propeller reproducing machine. Selmersheim

Temperature in Works.—65 deg. to 70 deg. Fahr.

Formalin.—Formalin is painted on the laminæ, which are then put into heated chambers for 8 or 10 mins.

Glue.—The laminæ are then taken out and a mixture of hot Lyons and Givet glue is immediately applied, two laminæ at the time.

Clamps.—The usual French type, left on 5 to 12 hours; then pairs glued *en bloc*, 12 hours. Formalin is immediately painted on along the glue joints.

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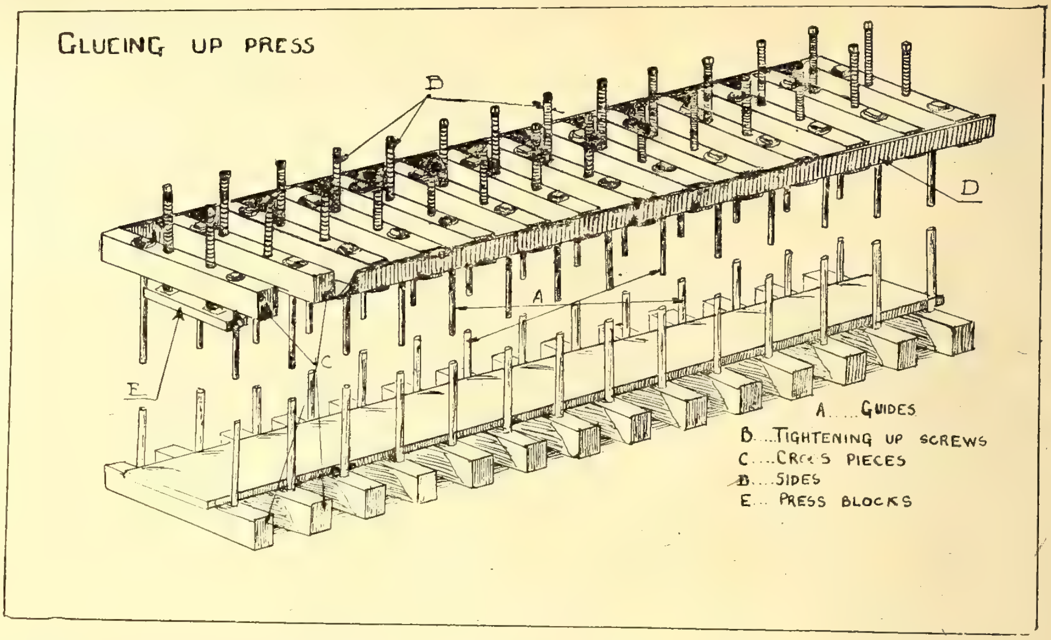


Casein Glue.—Recently only casein glue has been employed, and airscrews glued up *en bloc* in one clamping up.

Shaping, Roughing, and Inspection.—As in other works.

De la Grandville (Plyboard Construction).
(Société des Hélices Armées et Matricées.)

Temperature.—In the works, 65 deg. Fahr., excepting when first roughing out laminæ.

Air.—Air in works is kept dry as possible.

Timber.—Walnut, mahogany, lime, ash, and others, in 7 mm. laminæ. Face of airscrew in walnut or mahogany. Face pieces of boss in any hardwood.

Laminæ.—Are 7 mm. in thickness and are full length for first four or five from tip to tip. Next full length from sections E to E, next full length from sections D to D, and so on.

First Stage.—Marking out and sawing of laminæ, to be done as far as possible in a room having a temperature of 75 deg. Fahr.

Second Stage.—Assembling, gluing, and placing of fabric between the first four laminæ to about one-third from tip—that is, only from about section E to tips. Clamping the whole *en bloc* on the matrice or shaping press. Fifteen minutes are allowed to elapse before tightening up the clamps.

Period Under Clamps.—For soft woods two days, and for hard woods three days. The glue used is casein, make R.G. The preparation of this glue requires no special installation, being used cold. Care is taken to brush off all glue oozing out of the sides of the laminæ after a lapse of one hour under clamps.

Third Stage.—Removing block from matrice or shaping press, checking alignment and centre of airscrew, drilling a preliminary hole of 50 mm diameter in centre of boss. Ten days are allowed for block to dry after release from clamps.

Fourth Stage.—Gluing onto the boss of hardwood packing pieces, if necessary. Two days under clamps. Five days drying after release from clamps.

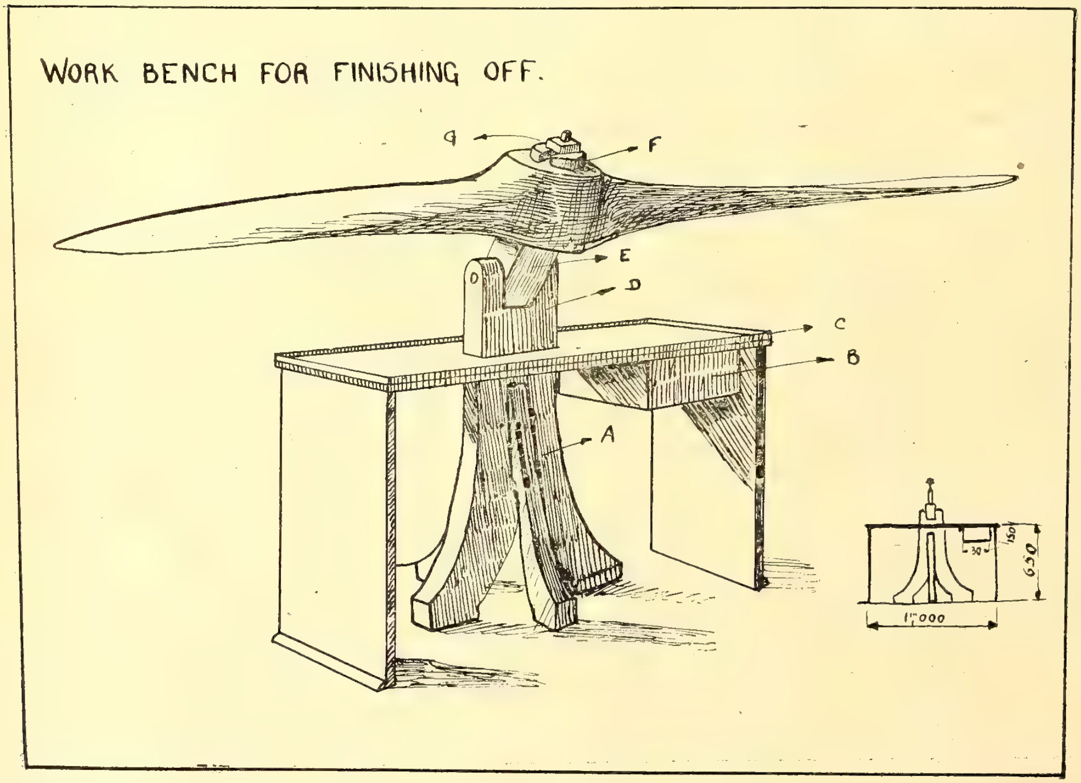
Fifth Stage.—Squaring the hub, drilling centre bore and bolt holes to size.

Sixth Stage.—Tracing and roughing out on band saw. Three days allowed for 5th and 6th stages. Ten days left to stand after roughing before shaping.

Seventh Stage.—Shaping, etc., balancing, and S.F.A. inspection. This takes from eight to ten hours in all.

Eighth Stage.—Tipping or beading with specially prepared "pig-skin" parchment, without screws or rivets, with special hot "Bugaline Glue." Three days under clamps. *Note.*—If the pitch of an airscrew has dropped, or *vice versa*, at the tip, it is claimed that this can be rectified and made to keep correct for an indefinite period by the application of this pig-skin clamped on by jigs having the required pitch.

Varnishing.—Woodfiller was used and three coats of varnish, pumiced down, and French polished. Recently all airscrews were lacquered instead of varnished.



Valeri (Plyboard Construction.)

The Valeri system of manufacture would have been very interesting if the timber scarcity had been more severe. It allowed 30 airscrews to be made from a cubic metre of timber instead of only six, and called for no special skill or plant.

Thin veneers as used for three-ply were employed and disposed :—

One layer with fibre along the airscrew blade.

One layer with fibre at 45 deg. to the left.

One layer with fibre straight.

One layer with fibre at 45 deg. to the right.

One layer with fibre straight, etc.

The outside boards for the boss were of

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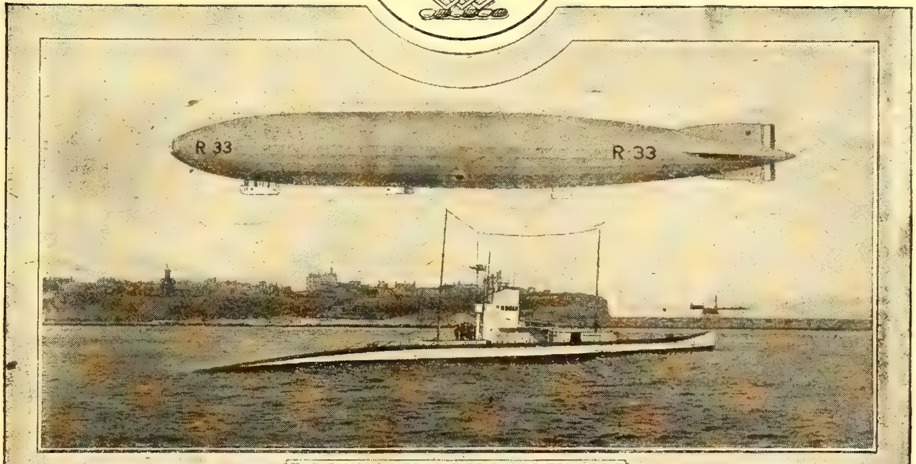

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hardwood, but any timber excepting elm could be used for other layers. Either casein or hot glue could be used.

The top and bottom boards of the press could be shaped so that when dry the blade is already nearly to pitch. This saves a lot of cutting away. When hot glue was used water-heated presses were employed.

The strength of these plyboard airscrews is equal to ordinary construction, and when properly made there is no tendency to lose pitch even after long service.

The table herewith gives an idea of the timber required to make an average airscrew by the various methods.

COMPARISON OF THE THICKNESS OF BAULK NECESSARY TO MAKE A NORMAL AIRSCREW.

Laminations.	Ordinary English Method.	De La Grandville.	Valéri.
Sawing	1 mm.	2 mm.	0
Thickness	25 mm.	10 mm.	2 mm.
Planing down ...	4 mm.	3 mm.	0
Finished Plank ...	21 mm. thick	7 mm.	2 mm.
Thickness of normal Airscrew	147 mm.	147 mm.	147 mm.
Loss for seven Laminations	35 mm. per 21 lm.	105 mm.	no loss in sawing & planing.
Thickness of Baulk necessary to make a normal Airscrew	182 mm.	252 mm.	147 mm.

Tipping.

Seaplane airscrews had their blades protected with copper sheathing, following British practice, with the exception that instead of fitting a long length of metal the tip was divided into 8 cm. lengths with 1 mm. between the pieces. This allowed the blade to give a little and avoided the corrugation of the metal which was otherwise common.

Recently land-machine blades were also tipped, but with "Grandville" pig or calf parchment. This was to prevent splitting after being hit, and therefore corresponded to the fabric used on British airscrews.

Lacquering.

Since lacquering has been adopted, tipping has been abandoned as unnecessary.

The lacquer used is the usual "Japanese" gum, supplied from French Indo-China in large quantities. The gum is allowed to settle in barrels, the heavy precipitate being the least valuable, and it is used mixed with a kind of Fuller's earth for a woodfiller. When this coat has dried it is well pumicestoned down and the second coat, consisting of pure gum of the middle gravity, is applied. This is given at least a day to dry and is also pumicestoned before the third coat is applied. This consists of the best of the gum and has mixed with it the necessary colouring matter.

All the coats are applied not with a brush, but with a flat wooden instrument shaped like a putty-knife.

The lacquer finish is hard but flexible. It is not affected by acids, seawater, spray and sand, gravel or the like, but at the same time gives to the whip of the blade without flaking or cracking. Indeed, the process is also used for the mudguards of motor-cars and for insulating fine copper wire for electrical machines for this very reason.

Lacquering gives a beautiful finish for less expenditure than varnishing and polishing.

Dihedral.

Two designers, Levasseur and Lumière, departed from orthodox practice in giving a slight forward dihedral to their blade to balance correctly the centrifugal and bending stresses on high horse-power airscrews. Unlike British designs, they had constant pitch blades.

Variable Pitch.

The development of the Rateau Turbo-Compressor and other systems of maintaining engine power at altitudes has led to a lot of interesting experimental work, but nothing definite has yet been evolved.

Mr. L. de Monge, the designer of the Lumière airscrew and Mr. Desmons are working up a patent of the latter to obtain the same result without a variable pitch airscrew. The proposal is to have two two-bladed airscrews, one for getting off and climbing to 15,000 ft., and the other for operating above that height. The altitude airscrew would be free during the first part of the climb, and be brought into action when required by a special clutch, thus converting a two-blader into a four-blader at will.

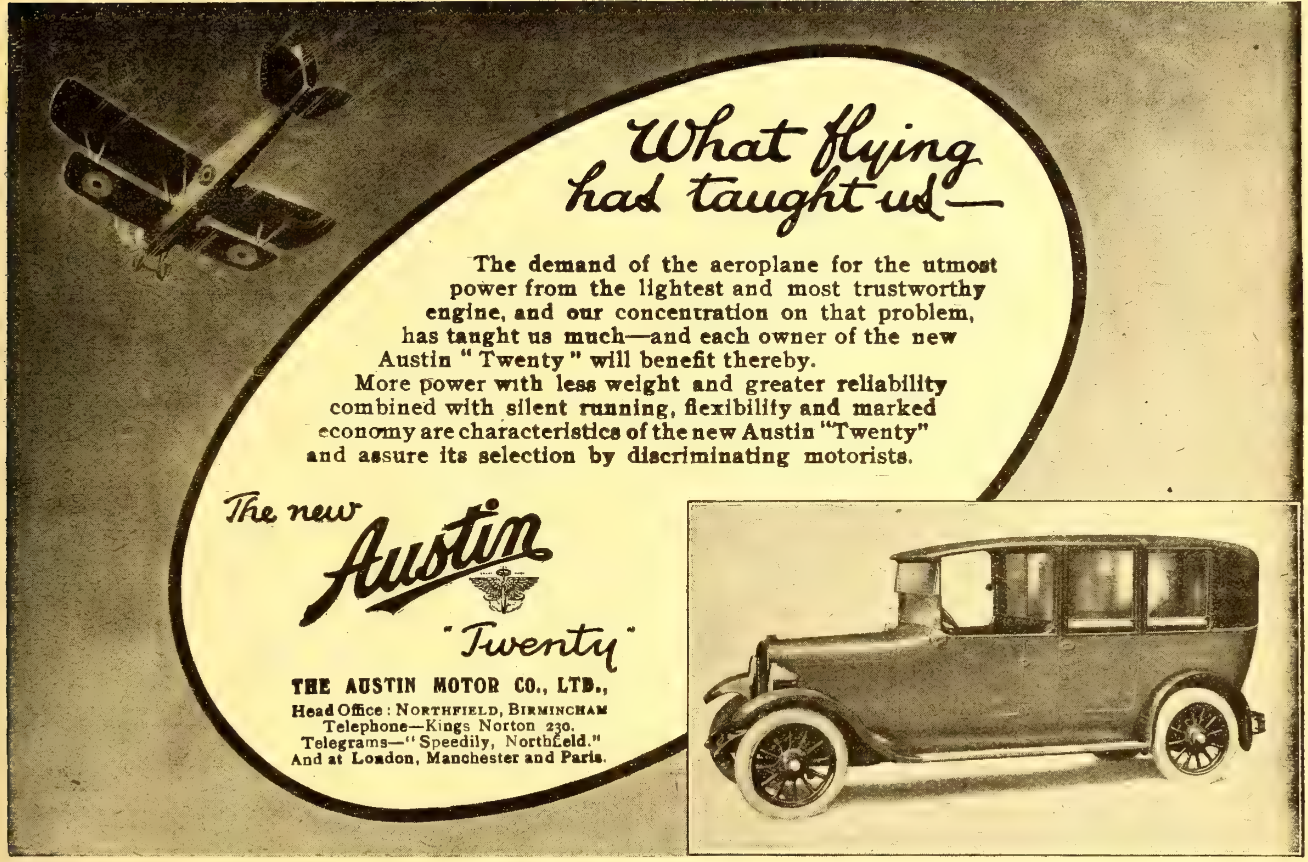
Several attempts were made to produce pusher machines with fuselages, but they were never quite successful.

There has really been very little to choose between French and British airscrew design. If anything, the light-weight, flexible French type was a little more efficient, and certainly cost much less to make. The joints and the concessions as to methods of manufacture allowed to makers by the Technical Authorities were practically the same as in England.

TABLE OF COMPARATIVE TESTS.

300 H.P. Hispano-Suiza—Sopwith Dolphin Machine with various Airscrews.

Machine ... Engine ... Total Load ...	Sopwith Dolphin C_1 No. 3618. H.S. 8th Feb. 300 h.p. No. 200,044. 359 Kilos.				Do.		Do.		Do.		Do.		Do.	
Airscrew (Make) ... Series ...	Lumière 144 b.		Gallia 38 No. 2509		Ratmanoff H.V. 11549		Lumière 144 d.		Levasseur 672 No. 23526		Levasseur 668 No. 23332		Gallia 38 No. 2509 Mod.	
Diameter ...	2.50		2.55		2.49		2.50		2.55		2.50		2.55	
Pitch ...	2.155		2.21		1.99		2.135		2.03		2.065		2.09	
Width of Blade ...	0.176		0.211		0.172		0.1757		0.1705		0.1575		0.1895	
	Time	R.P.M.	Time	R P M	Time	R.P M.	Time	R P.M	Time	R.P M	Time	R.P.M.	Time	R.P.M.
Climb to 1,000 Metres	2'39	1.650	2'36	1,550	2'44	1,690	2'45	1,625	2'48	1,640	2'57	1,665	2'42	1,650
,, 2,000 ,,	5'17	1,660	6'03	1,540	5'18	1,685	5'31	1.630	5'31	1,655	5'54	1,675	5'23	1,645
,, 3,000 ,,	8'41	1,670	9'45	1,525	8'26	1,680	8'40	1,630	8'39	1,660	9'15	1,695	8'35	1,640
,, 4,000 ,,	12'35	1,660	14'43	1,510	12'13	1,685	12'29	1,630	12'20	1,660	13'07	1,695	12'21	1,630
,, 5,000 ,,	17'40	1,650					17'51	1,635	17'37	1,670	18'42	1,685	17'42	1,620
,, 6,000 ,,	26'27	1,640												
Ceiling in Metres ...	7.500						7,500		7,500		7,500		7,500	
	K.P.H.	R.P.M	K.P.H.	R.P.M.	K.P.H.	R.P M.	K.P.H.	R.P.M	K P.H	R P M.	K.P.H.	R.P.M.	K.P.H	R P.M.
Speed at 1,000 Metres	,,	,,	,,	,,	227	1,880	,,	,,	,,	,,	,,	,,	,,	,,
,, 2,000 ,,	,,	,,	,,	,,	223.5	1,870	227.5	1,830	223.0	1,860	212	1,860	,,	,,
,, 3,000 ,,	,,	,,	223.5	1,740	219.5	1,860	223	1,815	219.0	1,850	211	1,850	219	1,790
,, 4,000 ,,	215	1,840	221	1,720	214	1,840	216	1,785	212.0	1,825	208	1,830	215	1,770
,, 5,000 ,,	202	1,810					208	1,760	204.0	1,800	200	1,815	207	1,750
,, 6,000 ,,	182	1,740												



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The demand of the aeroplane for the utmost power from the lightest and most trustworthy engine, and our concentration on that problem, has taught us much—and each owner of the new Austin "Twenty" will benefit thereby.

More power with less weight and greater reliability combined with silent running, flexibility and marked economy are characteristics of the new Austin "Twenty" and assure its selection by discriminating motorists.

The new Austin "Twenty"

THE AUSTIN MOTOR CO., LTD.,
Head Office: Northfield, Birmingham
Telephone—Kings Norton 230.
Telegrams—"Speedily, Northfield."
And at London, Manchester and Paris.

WAKEFIELD

Castrol R

The Cosmos Engineering Co., Ltd.—builders of the 14-cylinder, 315 h.p. "Mercury" engine – exclusively use and recommend Castrol "R" for lubrication of the above engine and also with their 450 h.p. "Jupiter."

Lubricated with Castrol "R" a "Mercury" engine, fitted to a Bristol Scout, achieved the best climbs in the official tests—10,000 feet in 5 mins. 25 secs.; 20,000 feet in 16 mins. 15 secs. These figures, checked by official barograph records, constitute British records.

C. C. WAKEFIELD & Co., Ltd.
Wakefield House, Cheapside,
London, E.C. 2.

A TEST OF ALCOHOL FUEL.

According to a message from Washington, one hundred and thirty gallons of alcohol were brought into Washington by a mail aeroplane of the Post Office Department recently. The aeroplane flew 3,000 ft. over the heads of the excise officers and policemen on the look-out for what are known as "bootleggers." The alcohol was not carried in the mailbags, which would be in violation of the law, but in the fuel tanks, nor was it peddled around in the haunts of the bootleggers after its arrival. The proper thirst for this character of alcohol has not yet been cultivated. It contains a fair percentage of benzol and enough ether to give it additional kick.

The aeroplane which brings in this alcohol every other day is known among the air mail pilots as the "Bootlegger," and is the forerunner of a revolutionary change in the motor operation of the Air Mail Service. This product is the new alcohol fuel which takes the place of the high-grade aeroplane petrol. After a number of tests with this new fuel under adverse weather conditions, the Post Office Department is changing over its aeroplane engine attachment and will shortly be operating the entire New York-Washington route with the alcohol fuel.

Its great advantage lies in the cleanliness of the engine, reducing cost of upkeep, and in its burning cooler than gasoline, thereby overcoming objections to the high compression engine at low altitudes. Engines which ordinarily are 25 to 26 gallons of petrol operate on the new fuel on about 20 gallons, which gives greater flying radius to the machines. It reduces chances of forced landings by keeping the sparking plugs and the engine cylinders clean of carbon and oil accumulations. With this fuel it will be possible to operate the mail in a De Havilland 4 regularly in a non-stop flight from New York to Cleveland, a distance of 430 miles, whenever fog or rain conditions in the mountains make it inadvisable to attempt to land at the intermediate field at Bellefonte, Pa.

A CORRECT DIAGNOSIS.

Apropos the Schneider Cup race it is gratifying to observe that the French journal "L'Air," in its report of the occurrence, states that it is glad to believe that those who know the British people will not accuse them of intentional discourtesy to the foreign competitors, but will realise that it was merely the organisation of the competition which was in fault.

AN INTERESTING MOVE.

Those who like to have news of the pioneers of aviation will be interested to hear that Mr. C. Compton Paterson, who was certainly one of the first men in England to build and fly his own machine—as he did at Freshfield, in Lancashire, in 1910—and who afterwards, with Mr. Guy Livingston (now Brigadier-General and C.M.G.), organised the first introduction of aviation to South Africa, is now organising the output of Skootamotas in the Isle of Wight.

It will be remembered that Mr. Paterson was responsible for the building, equipping, and manning of the factory erected by J. S. White and Co., of Cowes, on the high land above the town, and that while there he managed to produce an extremely creditable number of Short seaplanes with hands which had to be trained on the spot. This factory has now been taken over by Gilbert Campling, Ltd., for the manufacture of Skootamotas, and Mr. Brown, of that firm, is busily engaged with Mr. Paterson in reorganising the factory for rapid production on the most approved modern system.

When in the Isle of Wight recently one had the opportunity of going round the factory and studying the methods which are being laid down for production Though simplicity itself in operation, the system is in fact far too elaborate to be described in print, apart from the fact that the firm might not like to have its own particular system made public. One can only say that the organisers do not seem to have omitted from their consideration a single detail which can assist rapid and efficient production.

The fact that Mr. Paterson is in control of the works is sufficient guarantee that the work will be thoroughly well done, and though it will be some little time before production actually begins, one believes firmly that the apparent delay caused by organising production will be made up in a very short time by the perfect system under which production will proceed.

FOREWARNED AND FOREARMED.

On Friday, October 10th, 1919, J. Samuel White and Co., Ltd., of East Cowes, formerly well known as builders of seaplanes of very high quality, delivered to the Navy a new and powerful destroyer of the "W" class, known as the "Witherington." This ship was laid down on July 29th, 1918, and launched on January 16th, 1919.

From the aeronautical point of view the interesting point about "Witherington's" armament is that she carries special anti-aircraft high angle guns as part of her regular armament. This may be taken as proof that the Royal Navy at last recognises that aircraft are to be reckoned in future as one of the regular afflictions of war and that H.M. ships must in future be armed to combat this new weapon.

ROLLS-ROYCE, LTD.

In a letter received regarding the Rolls-Royce exhibit at the coming Olympia Motor Exhibition several interesting facts are stated about their aero engines.

During the war the Government required the whole of the Rolls-Royce works to be engaged exclusively in the manufacture of aero engines. Since the armistice the Government have required that a large proportion of the works should be engaged in making further aero engines. A new type is now being constructed of high horse-power.

It is also stated that the company have derived a great deal of information during their extensive experiments and experience connected with the construction of their aero engines. This information, which has helped to perfect their present car chassis, might otherwise have required many years to acquire.

PALMER TYRES AT OLYMPIA.

The Palmer "Cord" tyre—now used on practically every wheeled aeroplane in this country—will naturally enough be well represented at the forthcoming Motor Show.

Unfortunately, lack of space will prevent the exhibition of the Palmer cording machine, but a full line of their tyres will be on show at the stand of the Palmer Tyre, Ltd.

ILLUMINATION.

When the metal filament lamp—now the standard appliance for electric lighting throughout the world—was first produced great difficulty was found in producing the wire filaments in sufficiently small diameters to give units of sufficiently small candle-power for ordinary use, except when run on circuits of very low voltage. This limited their use to conditions where large lighting units could be employed or to cases where transformers could be used to give a low pressure supply.

Since those days constant experiments and research have removed these disabilities.

The nitrogen-filled "Half-Watt" lamp, introduced in 1913, was the result of a discovery that metal filaments could be run at a higher temperature and giving a much greater efficiency in an atmosphere of nitrogen than in a vacuum.

Although the filament of an incandescent lamp is well below the melting point of the metal, a kind of slow evaporation of the metal goes on continuously, and the metal is deposited on the bulb, blackening it, and thus greatly reducing the light given, and eventually causing the failure of the filament itself. The presence of an inert gas reduces this disintegration of the filament and allows it to be run at an increased output.

This type of lamp suffers from one fault of the early metal filament lamps and it cannot be made to give small candle-powers except on low voltage circuits.

In 1914 it was found that the use of Argon instead of nitrogen for filling this type of lamp made it possible to use finer filaments without disintegration and consequently to produce lamps of smaller candle-power.

Argon—discovered by Lord Raleigh in 1894—is an inert gas present in very minute quantities in the atmosphere. Until 1914, no use had been found for it, and there were no facilities for its collection, and under war conditions great difficulties were experienced in obtaining Argon for gas-filled lamps.

Since then the General Electric Company have laid down an Argon producing plant at the Osram Lamp Works at Hammersmith, and they are now producing ½-watt Osram Argon-filled lamps commercially.

100 to 130 volt lamps are made in sizes down to 60 watts, and lamps for circuits between 200 and 260 volts are made down to 100 watts.

The candle-power of these lamps is approximately twice that of the ordinary metal filament lamp consuming the same power.

ANOTHER TRANSFORMATION.

The following appears in the list of new companies registered :—

Kingsbury Engineering Co., Ltd.—Registered Oct. 13th. Capital £200,000 in 5s. shares. Objects : To carry on the business of manufacturers of and dealers in motor vehicles, cycles, ships, vessels, aircraft, etc. The first directors are : E. Barningham, Calcot Rise, Reading; H. Barningham, 11, Selwood Place, S.W.7; A. J. Foster, 445, Oxford Street, W.; and P. Lake, Kingsbury House, Kingsbury, N.W.9, all engineers. Solicitor : L. Blair, 94, Hope Street, Glasgow. Registered office : Kingsbury Lane, Kingsbury, N.W.9.

First Across the Atlantic

in Direct Flight—

"SHELL AVIATION"

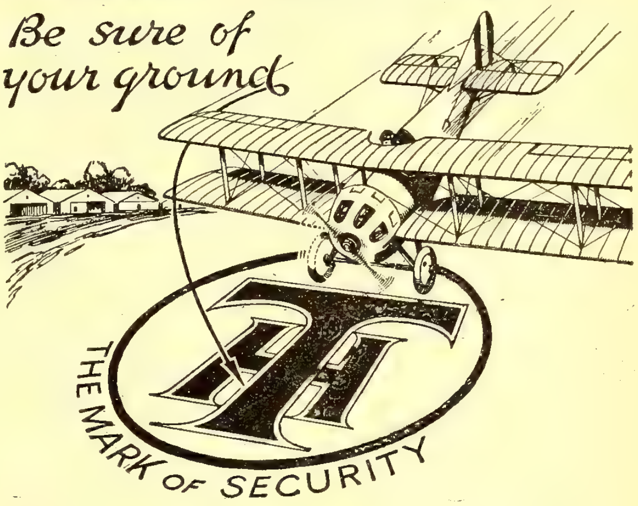
MOTOR SPIRIT DE LUXE

Now Available for your Car

"SHELL" MARKETING CO., LTD.,
39-41 Parker Street, Kingsway, London, W.C.2.

AIR RISKS!

Be sure of your ground



Consult the leading Motor Insurance Brokers for Policies to cover Passengers in FLIGHT, ACCIDENTS to PILOTS, FIRE, DAMAGE, and THIRD PARTY RISK in connection with Airplanes and Airships.

'Phone—Central 156 (2 lines).

HAROLD TOWNEND, LTD.,
(*Managing Director*, **HAROLD TOWNEND.**)

Wires—"Carinsur London."

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FOUNDED 1904.

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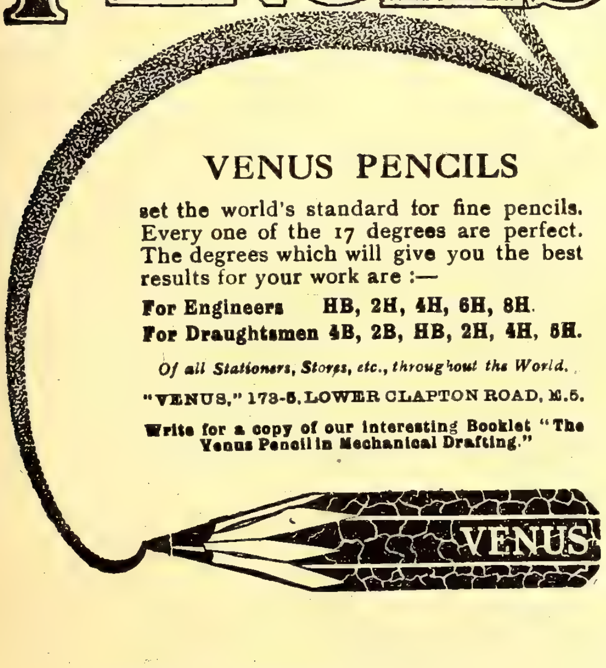

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set the world's standard for fine pencils. Every one of the 17 degrees are perfect. The degrees which will give you the best results for your work are :—

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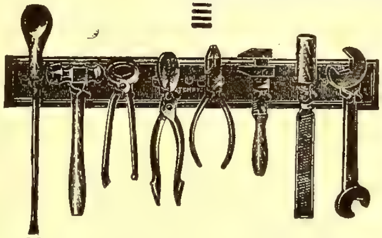
Of all Stationers, Stores, etc., throughout the World.

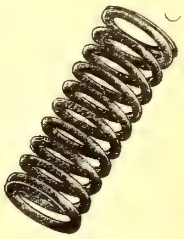
"VENUS," 173-5, LOWER CLAPTON ROAD, E.5.

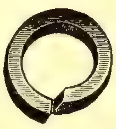
Write for a copy of our interesting Booklet "The Venus Pencil in Mechanical Drafting."



305. Terry's "Avecta" Tool Rack." High-grade clips on wood foundation.

4	6	8	10	12 clips.
2/-	2/6	3/-	4/-	5/- each.





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has been proved by stress of war, and has won new prestige, because of its dependability under extreme tests.

May we quote for your supplies? We do so to sample or print.

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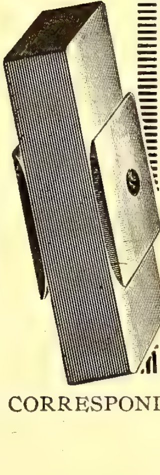
The Spring & Presswork Specialists.
Redditch, Eng.



Estab. 1855.

AVIATION INSURANCE

Go to the most experienced Aviation brokers:

Bray, Gibb & Co., Ltd., 166, Piccadilly, W.1.

ADVICE GLADLY GIVEN.

COMPLETE SETS FOR

NIGHT-LANDING

AS ILLUSTRATED.

Send for free booklet.

ORDERS NOW UNDERTAKEN
FOR COMMERCIAL PURPOSES.

IMPERIAL LIGHT LTD.,
123, VICTORIA ST., LONDON, S.W.1.
Telephone: Victoria 3540 (3 lines).
Telegrams: Edibrac, 'Phone, London.

SHRINKOS:—A Special Die Steel; When centre hole has become worn on re-hardening will come back to its original size.

ALL OUR
STEELS ARE SOLD
ON QUALITY.

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LOOK OUT FOR OUR
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Steel Makers for Over 100 Years. AETNA WORKS SHEFFIELD

HOPE'S · LOK'D-BAR · SASH
WALLS of DAYLIGHT.
Specially suited to Aerodrome Construction
Vents are Watertight and easily operated
55 LIONEL ST BIRMINGHAM · 59 BERNERS ST LONDON. W.

COMMERCIAL & AERONAUTICS CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

Civil Aerodromes.

The Air Ministry announced on Oct. 25th that the following lists of aerodromes are issued as an addition or in amendment of the lists already published :—

List B (Service Stations also available for Civil Use).

Amendments.—The following aerodrome has been transferred to List E and is now published in that list.

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Sherburn-in-Elmet.	Sherburn-in-Elmet.	Selby.

List C (Aerodromes temporarily retained for Service purposes.)

Amendments.—The following aerodromes have been transferred to List E and are now published in that list :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Lake Down	Amesbury	Salisbury
Newhaven (S)	Bishopstone	Newhaven
Sedgeford	Sedgeford	Hunstanton
Yatesbury	Calne	Marlborough

References : (S) Seaplane station.

List D.

Aerodromes licensed as suitable for "Avro (504K) and similar types of aircraft" only. Except in very few instances accommodation does not exist. The licences have also in the majority of cases been issued for limited periods only.

Aerodrome.	Location of Aerodrome.	Nearest Large Town.
Brighouse	Stoney Lane	Halifax
Leamington	Polo Ground, Radford Road	Leamington

List E. (Stations no longer in use by the R.A.F.)

These stations have been passed to the Government Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing grounds in the immediate neighbourhood.

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Lake Down	Amesbury	Salisbury
Newhaven (S)	Bishopstone	Newhaven
Scapa Flow (S)	Thurso (by boat to mainland)	Kirkwall
Sedgeford	Sedgeford	Hunstanton
Sherburn-in-Elmet	Sherburn-in-Elmet	Selby
Yatesbury	Calne	Marlborough

References : (S) Seaplane station.

The Continental Air Services.

The Airco Service.

The ninth week of regular flying between London and Paris was completed by Aircraft Transport and Travel, Ltd., on Oct. 25th. One hundred and thirty-five flights have now been accomplished out of a scheduled number of 139. The charts showing the volume of goods carried are showing a healthy upward curve.

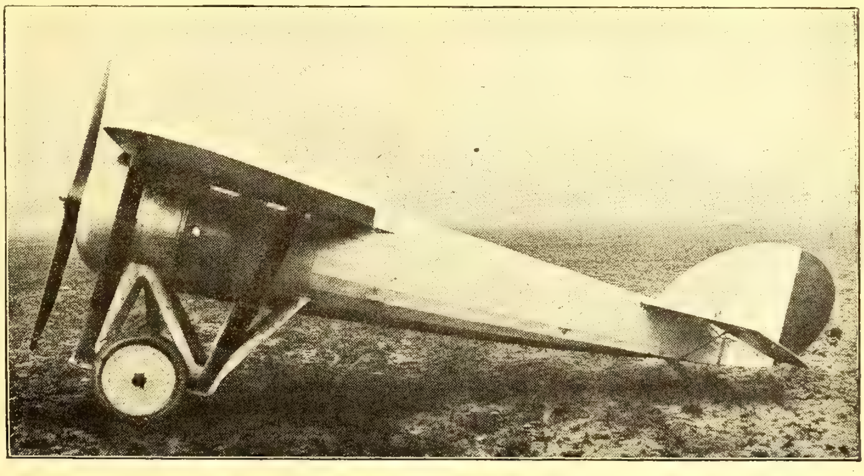
THE AIRCO SERVICE

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow	Pass
Oct. 20th	D.H. 16	Lt. Shaw	12.30 p m.	2.55 p.m.			3
	D.H. 4a	Lt. McMullin			12.35 p m.	2.50 p.m.	0
Oct 21st	D H. 9	Lt. Chattaway	12.42 p m.	3.00 p.m.			2
	D.H. 4a	Capt. Baylis	12 42 p.m.	3 00 p.m.			1
	D H. 4a	Lt. Armstrong	1 25 p.m.	3 50 p.m.			1
	D.H. 16	Lt. Tebbit			12.30 p.m.	2.46 p.m.	2
Oct. 22nd	D.H. 16	Lt. Powell	12.30 p.m.	2 50 p.m			2
	D.H. 16	Lt. Shaw			12.30 p m	2 30 p m.	2
Oct. 23rd	D.H 4a	Lt. Campbell-Orde	12.30 a m.	2.50 p m.			0
	D H. 4a	Capt Baylis			12 27 p m.	2.45 p m.	0
	D.H 9 R	Capt. Gathergood			12.47 p.m.	2.25 p m	0
Oct. 24th	D.H. 16	Maj. Patteson	12.40 p m.	2 50 p.m.			3
	D.H. 4a	Lt. Chattaway			12.30 p.m.	2 30 p m.	0
	D.H. 9	Lt. Armstrong			12.30 p.m.	2.45 p m.	0
	D.H. 4a	Lt. Powell			2 50 p m.	4 40 p.m.	0
Oct. 25th	D.H. 4a	Lt. Lawford	12,30 p.m.	2 45 p m.			1
	D H. 16	Lt. Campbell-Orde			12.30 p.m.	2 50 p.m.	0

On Oct. 23rd Lieut. Lindley piloted a specially chartered machine, a D.H.4a, which left Hounslow for Brussels at 2.55 p.m., carrying a passenger on urgent business. The time of arrival at Brussels is not notified.

The Handley Page Service.

During the week ending Oct. 22nd 47 passengers and 2,184 lb. of freight were carried on the Handley Page service London-Paris. Lieut. McIntosh piloted a machine that made a return journey to Paris on one day. The actual flying time was 6 hr. 40 min.



The Nieuport monoplane (180 h.p. Le Rhône) on which M. Jansen is attempting to become holder of the Coupe Deutsch. He completed the course at a speed of 124.6 miles an hour, and held the Coupe until two days afterwards M. Sadi Lecointe beat him with a speed of 153 miles an hour. It is of interest to note that the speed of this monoplane is not notably higher for the extra 50 h.p. than was that of the Bristol-Barnwell monoplane with the 130 h.p. Clergêt.

On Oct. 20th, despite the prevalence of fog over England and the Channel, a Handley Page accomplished its journey from Paris to Hounslow with freight and passengers. The visibility was very poor. The flight took 3 hr. 45 min.

On Oct. 24th a machine on the same journey with nine passengers and freight passed through a snowstorm in Kent.

During the week ending Oct. 22nd 19 passengers were carried on the London-Brussels service.

The London Customs Bill of Entry now contains in its Imports columns details concerning goods brought into Great Britain by air. A recent issue announced that the Handley Page Transport Co., Ltd., had imported from France quantities of silk, fancy goods, ladies' hats and embroidery.

The B.A.T. Service.

On Thursday, Oct. 23rd, the B.A.T. commercial machine, piloted by Mr. Cyril Turner, left Hounslow for Amsterdam, at which city he arrived in 2 hrs 40 min.

On Saturday, October 25th, Major C. Draper piloted a B.A.T. saloon-passenger machine with a full complement of passengers to Amsterdam. This trip is quite outside the regular service, but the demand for aerial transport to Holland is now growing, and it may be necessary to put on this service two machines per week instead of one.

The London-Paris Flight: Fastest Time.

Sir,—In your issue of October 22nd appears an advertisement of the Aircraft Manufacturing Company in which it is stated that a *racing machine*, piloted by Capt. Gathergood, accomplished the flight from Hounslow to Le Bourget in 1 hour 20 minutes, and a claim is made that this is the greatest speed so far attained on the London-Paris route.

This claim is quite unwarranted, because a far finer performance was accomplished in April last by a standard Martinsyde F.4 machine, which did the journey to Paris in 75 minutes.

The following figures have been obtained by us from the Air Ministry and relate to a flight made on April 9th by a standard Martinsyde F.4 (Rolls-Royce "Falcon" engine) flown by Capt. Jefferson on the ordinary London-Paris route, carrying despatches for the Communication Squadron. This machine left Hendon at 3.20 and arrived at Buc at 4.35. The distance on the route followed was 253 miles, and the speed works out at an average of 202 m.p.h.

As you are no doubt aware the Royal Aero Club recognise performances officially published by the Government as official performances, and so far as we know there was no official observance of the performance claimed by the Aircraft Manufacturing Company, which in any case is not the greatest speed on the London-Paris route; the Hounslow-Le Bourget route being a shorter route and the machine was apparently a specially-designed racing machine, whereas the performance set up by a Martinsyde was a standard machine in the hands of the R.A.F.

We shall be glad if, in justice to ourselves, you will give prominence to this letter in your next issue.

Yours faithfully,
Martinsyde Ltd.
Hamilton Fulton (Director).

Bournemouth.

It is arranged that the Avro air fleet will visit Bournemouth to give a flying display for the week ending Nov. 2nd.

Brighton.

On Saturday, Oct. 25th, the Avro air fleet visited Brighton for the third successive week-end. Tea was served on the ground and a band was present. The new aerodrome at West Platchington Farm, which consists of about 50 acres, is being fenced round and hangars are being erected.

A very large crowd collected on the aerodrome. Owing to the high wind the parachute descents had to be postponed, but Major A. G. Taylor, A.F.C., put up a very fine exhibition of trick-flying.

The chief interest, however, centred in the appearance of the little Avro-Green "Baby," which had been brought down from Hamble by Capt. Hammersley, M.C. The "Baby" played about in the air as usual, and delighted the crowd immensely. Another attraction was the display of the model aeroplane kites which have been invented by an A.I.D. official at Hamble. These were made to perform most extraordinary feats in the air.

Brooklands.

A Weybridge correspondent of The Aeroplane writes :—

There has been little activity at Brooklands aerodrome lately, beyond a few test flights. The R.A.F. are expected to remain there for some months to come. Machines flying across country occasionally land at Brooklands, but there is no activity at present manifested in the way of passenger flights, etc. The repairing of the motor track has been started, but the aerodrome itself has a rural aspect, owing to the presence of hayricks and sundry horses, although the various buildings, hangars, etc., and an occasional aeroplane might lead the newcomer to believe that Brooklands was once a busy aerodrome.

Messrs. Gordon Watney and Co., of Weybridge, who, during the war, were engaged in manufacturing and repairing aero-engines, are closing down on aircraft work of all sorts. Among the types of aero-engines which passed through the hands of this firm were the Beardmore, Clerget, Le Rhône, Gnôme, B.H.P., Hispano-Suiza, and R.A.F. engines. Nearly 2,000 employees were engaged at one time in this work.

The firm has lately begun again the construction and repairing of automobiles, with Mercédès cars as a special line. Before the war they were very successful with Mercédès cars in racing on Brooklands track.

According to reports from authoritative sources the Anglo-American Oil Co. will take over the works as a motor repair depot.

Another report declares that the Vickers "Vimy" commercial machines, for which the Chinese Government have placed an order, will be constructed at the Weybridge works of Vickers, Ltd. A considerable extension has lately been made to these works, which are manufacturing various appliances, included among which are brick-making machines.—J. S. S.

London.

Hendon.—Very little has been heard of the London Aerodrome at Hendon since the last of their summer meetings fizzled out owing to lack of public interest some months ago. With the general slackening down of the Aircraft Industry since the end of the war, it might have been thought that the place had died a slow and lingering death, but when one does get inside, quite a respectable amount of activity is to be found.

On the afternoon of Oct. 17th one's guide was Major Carr, A.F.C., D.C.M. (late R.A.F.). Under his cheerful guidance it was possible to make a tour of the workshops, where aeroplanes are still being constructed. Those most worthy of note are the Ganymede and two Grahame-White Limousines.

Multi-Passenger-Carrying Machines.

The Ganymede was constructed as a long-distance bomber early in 1918, but was not accepted by the Air Ministry. It was built as a twin fuselage three-engined biplane, fitted with two tractor and one pusher airscrews

The pusher engine has now been removed and a large long cabin has been put in its place with seats for 18 persons. In place of the two Sunbeam tractor engines, two Napier "Lion" 450 h.p. engines have been fitted. The machine has made some quite successful test flights.

One of the two Grahame-White Limousines was recently on a test flight when the engines cut out owing to failure of the petrol system. A landing had to be made on a rough allotment. The machine was somewhat damaged, but would have fared much worse if it had been without the two sturdy emergency landing wheels which are fixed at the bottom of the cabin. On the occasion of the accident these wheels took most of the weight of the machine, as one side of the main undercarriage broke.

There are machines owned by many people in Grahame-White's sheds. One saw a Westland Limousine, several Nieuports, a few D.H.6, and the expected collection of Avros. There were also two Grahame-White biplanes, pushers of ancient design, still perfectly fit for flying.

The Caproni Triplane.

The Caproni triplane has been expected in Sweden for the last month. But for that time it has been at Hendon with its tail comfortably housed under a tin hangar. The remainder of the machine has perforce to stay in the open, there being no accommodation for it, but it does not appear to have suffered.

On the afternoon of Oct. 17th it was taken for a short flight. The Italian pilot was accompanied at the dual control by Capt. Chamberlayne (late R.A.F.). It appeared that only one passenger was induced to sit in the ball-shaped greenhouse, which is in reality a two-storied passenger-cabin which is slung uncomfortably near the ground under the centre nacelle, which also accommodates the two pilots on the upper "floor" and a third engine which helps to push the machine along from behind.

With all its engine-power the Caproni flies quite well. There are a considerable number of interplane struts with mostly single cable bracing wires.

The two tractor engines are placed in the noses of the two fuselages and apparently only supported by a few holding-down bolts to the engine bearers. The monoplane tail plane has three huge balanced rudders fixed on its top. They are resplendent with the Italian national colours.

The B.A.T. Co

The British Aerial Transport Co. displayed some activity during the afternoon. A B.A.T. Baboon and an F.K.26 Commercial arrived on the aerodrome quite prettily as the darkness was setting in. All things considered, it was not as dull an afternoon as one in the summer, when only the monotonous hum of the passenger-carrying carroty Avros disturbed the peaceful sight of the trains going by.

Major C. Draper, D.S.C., flew a B.A.T "Bantam," fitted with a 200 h.p. "Wasp" engine, from Hendon to Cowes on Oct. 23rd, and returned on the same day in 35 min.

NORTHOLT.—Considerable success has been achieved by the Central Aircraft Company at their School at Northolt Aerodrome, and Mr. Herbert Sykes, O.B.E., the Chief Instructor, appears to be getting excellent results out of the C.A.C. "Centaur IV" training machine, which is fitted with a 100 h.p. Anzani engine.

The excellence of the C.A.C. system of training is shown by the fact that two of their pupils, Mr. Tanner and Mr. Pool, who recently qualified for their Royal Aero Club certificates, passed their tests after 3 hrs. 15 min. and 3 hrs 30 min. respectively in the air. The result is that each of them has now a matter of 7 hours' further flying practice as a properly certificated aviator before he has completed his full 10 hrs. of flying as specified in the School contract

Some of the earlier pupils have put up even more satisfactory performances in that one of them qualified after 1 hr. and 40 min. flying, and another one after 2 hrs. and 5 min. practice, which is certainly uncommonly good.

MANCHESTER.

The northern Avro fleet held a carnival at Alexandra Park aerodrome last week-end for the benefit of the Manchester and Salford Hospital Saturday Fund. Over 9,000 people paid for admission, and passenger-flying went on briskly till dusk came on, leaving many applicants for tickets disappointed. About £300 was handed over to the hospital fund. The flying display was as fine as was to be expected from the Avro pilots. Another display will be given on the same aerodrome next week-end.

CANADA.

SLOW DISTRIBUTION.

A member of the Aerial League of Canada at Victoria, British Columbia, writes that the League is trying to obtain some of the 107 machines given to Canada by the Imperial grant. By the present system of distribution they will be obsolete by the time the League lays hands on them.

A REBUILDING AND A PRECEDENT.

Yarrows, Ltd., shipbuilders, of Victoria, B.C., have rebuilt the Pathfinder I, a Curtiss training aeroplane which met with a bad accident. The machine had to be virtually constructed, and the shipbuilders, unused to that type of craft, had only technical blue-prints to guide them. The mechanics of the Aerial League gave advice on the more technical sides of the work.

M Sadi Lecointe, the temporary holder of the Coupe Deutsch, and M. Herbemont (on the right), the designer of the Spad-Herbemont monoplane.

The Pathfinder II (Curtiss Training Machine) at Victoria, B.C., during a flying exhibition.

When the machine was completed the Aerial League intended to fly the machine over Victoria with the Pathfinder II. On that occasion, for the first time in the history of the city, two aeroplanes would take the air in formation.

The Pathfinder II has been visiting various fairs in the district and taking up passengers, piloted by Mr. W. H. Brown. At Puyallup Fair a young couple insisted on going up together, so for the first time the Curtiss carried three persons.

BRAZIL.

THE AIR SERVICES.

According to Brazilian journals it is expected that the preliminary flights over the civil aerial transport routes which are to be served by the Italo Brazilian Aerial Transport Company will be made during October.

The machines to be used are two Capronis. The concern is under the management of the Italian engineer Signor Gialio Cappa Bava, and there are at present three Italian pilots, Lieuts. Guiseppi Gandola, Mario Quaranta, and Virgilio Ercolani. Lieut. Gandola is said to have been of D'Annunzio's squadron during the war.

DENMARK.

The Danish correspondent of THE AEROPLANE writes :—

Now that an air commission has been appointed and the Danish Parliament will soon sanction the Air Navigation Act, The Danish Traffic Co. (in preparation) has handed in applications for concessions on a number of routes. Under the new conditions the Government will control aviation very extensively and will not support private enterprise at State expense by granting concessions, though their issue do not mean monopoly on any line.

The home routes in question are : Copenhagen-Aarhus-Aalborg-Skagen ; Copenhagen-Odense-Kolding-Esbjerg and likely a route Aarhus-Flensborg, if the latter city returns to Denmark. Further, the foreign lines are : Copenhagen-Stockholm (perhaps on to Helsingfors and Petrograd) ; Copenhagen-Gothenburg - Christiania - Trondhjem ; Copenhagen-Esbjerg-Hull ; and Copenhagen-Warnemünde-Berlin (and perhaps Vienna), and finally various western routes, which have not been fully settled yet, as the negotiations with the air traffic companies there have not been finished.

FRANCE.

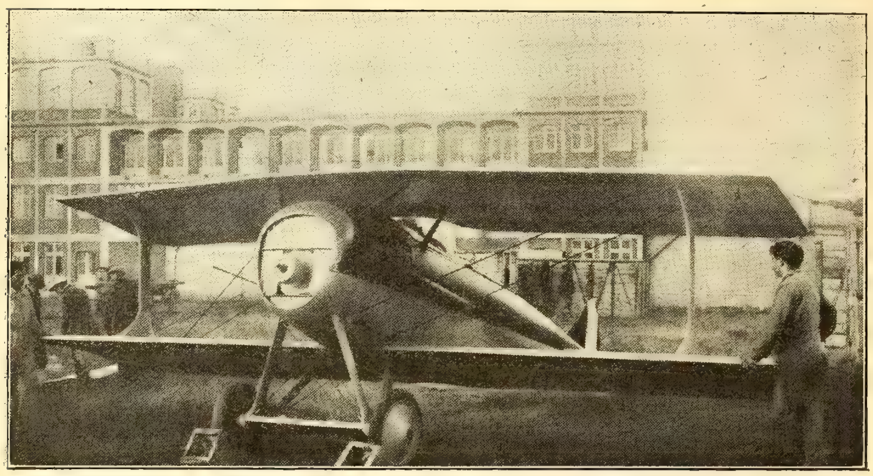
THE COUPE DEUTSCH.

On Oct. 20th M. Sadi Lecointe on a Spad Herbemont biplane (300-h.p. Hispano Suiza) flew over the Coupe Deutsch course at a speed of 156.5 miles an hour. Passing the Chateau de St. Germain at 3.18⅛ p.m. he repassed it at 4.3½ p.m. To beat this time it will be necessary for the next challenger to fly at a mean speed of about 172 miles an hour.

On Oct. 22nd M. de Romanet, flying a Nieuport biplane (300-h.p. Hispano-Suiza), made an attempt on the Coupe Deutsch. He left St. Germain at 2.3 p.m. and returned at 2.45, thus covering the course at a mean speed of about 167 miles an hour. Though faster than M. Sadi Lecointe, M. de Romanet does not become holder of the Coupe as his speed does not exceed that of the former pilot by the necessary 10 per cent.

THE FEDERATION AERONAUTIQUE INTERNATIONALE.

The Congress of the F.A.I. was held at Brussels on Oct. 22nd, 23rd, 24th. The representatives of Great Britain were, as stated last week, Lieut.-Col. McClean, Lieut.-Col. Ogilvie, Lieut.-Col. O'Gorman, and Mr. Perrin. France's interests were upheld by H.I.H. Prince Roland Bonaparte, M. le Comte de la Vaulx, MM. Tissandier, Besancon, Blondel, La Rougery, Clunet, Boyer, Guillan, Lieut.-Col. Ferrus, M. Gasnier, Capt. Hirschauer, MM Imbrecq, Laillemant de l'Institut, A. Leblanc,



THE HOLDER OF THE COUPE DEUTSCH.

The Spad-Herbemont biplane (300 h.p. Hispano-Suiza) on which M. Sadi Lecointe completed the Coupe Deutsch course on Oct. 20th at a speed of 156 miles an hour. He is the temporary holder of the Coupe Deutsch until his speed is beaten by 10 per cent. This means that to dispossess M. Sadi Lecointe the next competitor must achieve a speed of 173 miles an hour.

M. le Comte de la Valette, MM. Quinton, Rousseau, Screan, Surcouf, Saunière, General Roques, and Capt. Fonck, Japan, Norway, Netherlands, the United States, Denmark, Sweden, Brazil, and Italy all sent representatives

The New Postal Routes.

A decree outlining the new rates for the aeroplane post in France and Morocco was printed in the official gazette dated Oct. 21st, 1919. The rates for foreign countries remain at the rates previously settled by the respective countries concerned. The new internal rates for France and Morocco and between France and England are as follows :—The ordinary postal rates fixed by the International Postal Convention (in the years before aviation had become more than a dream) plus a surcharge by the country of origin of 3 frs. for each 20 grammes (or 2s. 6d. for each English ounce).

The Farman "David."

The little Farman two-seated biplane (40-h.p engine) known as the "David" recently produced by the Farman brothers is of the following dimensions :—Span, 23.294 ft.; chord, 5 ft.; length, 19.6 ft.; total plane surface, 215.286 sq. ft.; weight ready to fly, 440.924 lb. The price to the public is 12,000 frs. (about £330 at present rates of exchange). The cost of running this machine is said to be about thirteen centimes a kilometre.

The Farman Programme.

The Farman brothers intend to open direct aerial services between Paris and London and Paris and Brussels. They undertake to convey passengers from Buc to London, Brussels, Rome, Madrid or as far as the pocket of the traveller will permit. These journeys may be made in single-seated, two-seated, four-seated, six-seated, or twelve-seated aeroplanes.

They are specialising in the construction of aeroplanes for those who desire to adopt aerial touring as a hobby. In addition to the "David" referred to above the Farman brothers are producing the F.70 three-seater with tractor airscrew, the F.40 three-seater with a propeller airscrew, the flying limousine F.50 with tractor airscrews, and the twelve-seater "Goliath."

A Moroccan Aerial Post.

A civil aviation firm is shortly opening an aerial post in Morocco and to Spain. Letters from France will be taken by train to the Sud Express terminus in Spain and thence will be transported daily by aeroplane to Tangiers, Rabat, or Casablanca.

An Exhibition Flight.

The Vickers Vimy commercial aeroplane piloted by Capt. Cockerell which is on an exhibition tour on the Continent has visited Paris and Bordeaux. The machine was exhibited at both places and then flew to Biarritz (near the borders of Spain). The journey from Bordeaux to Biarritz took two hours.

The Salon de l'Aeronautique.

A correspondent writes :—

There is a point which may trouble exhibitors of large machines. If they are being flown over, to be dismantled and taken by road to the show, the exhibitors ought to be warned that the gates of Paris are barely three metres wide, so that large fuselages could not pass. There is one method of avoiding this trouble by taking the machine up river on barges to the quai near the Grand Palais. M. Bleriot is doing this.

All the available space for aeroplanes has been applied for, but there is still room in the galleries.

Bristols, Handley Pages, Westlands, Boulton and Paul, the French Vickers, and the S.B.A.C. have applied for stands.

A Moroccan Transport Line.

A new transport line is being opened in Morocco in November by a group of well-known French pilots. Sopwiths (French-built), converted to take two passengers, are being used. They are the single-seaters which were built in France as two-seaters, with Clerget 130 h.p. engines, and known here as "Camels."

Passenger Flights.

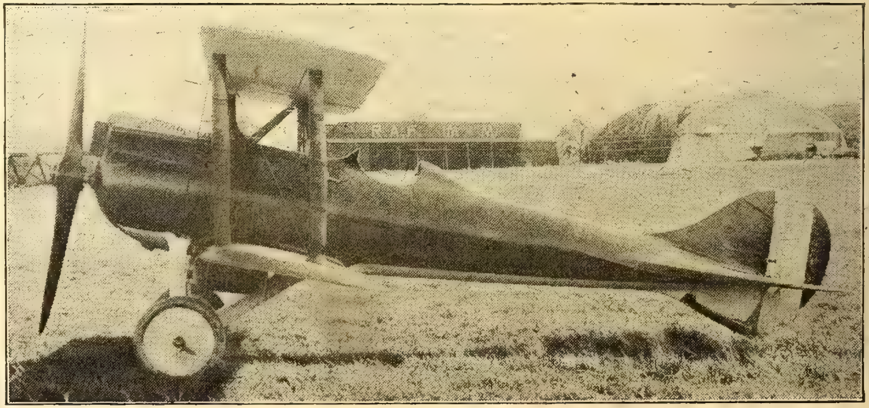
Lieut. Madon and his partner, Lieut. Nodin, are going on with their passenger-flying at holiday resorts during the winter. They are doing as much as any syndicate in France to popularise aviation. During the season at Boule and Trouville they took up over 5,000 paying passengers with one G.3 Caudron.

The Lumiere Airscrew.

The Lumière Airscrew concern has been converted into a Société Anonyme, with a capital of 500,000 frs. Directors : Madame M. Lumière and M. de Monge. This is the only propeller factory in France working full time. All the competitors for the Schneider Race and the Coupe Deutsch, with the exception of the Gourdou, had Lumière airscrews, which shows the esteem in which this design is held over here. All the G. Levy flying-boats in use on the Belgian Congo Aerial Transport Line have also their airscrews with the lacquer finish which prevents warping in hot climates.

Air Navigation Regulations.

Navigation and Maintenance Regulations, similar to those in force in England, are being prepared, making flying conditions the same in France as in other countries. The "Air Navigation Department," of which Colonel Saconey is the



THE FASTEST OVER THE COURSE.

Side view of the Nieuport biplane entered by the Nieuport Co. for the Coupe Deutsch and flown by M. de Romanet, who was the firm's spare pilot for the Schneider Cup Race. This Nieuport is a modification of the famous "Type 29," which did so well towards the latter end of the war. This machine covered the course at an average speed of 167 miles per hour, but as it did not exceed the Spad's speed by 10 per cent. it does not hold the Cup.

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GERMANY.

According to the "Times" of Oct. 28th all the aerial post and passenger traffic between Germany and Czecho-Slovakia has been taken over by the Saxonian Airship Company, of Dresden. The airship service will run thrice weekly.

A New Landing Ground at Karlsruhe.

The parade ground at Karlsruhe is now to be turned into a landing ground for aeroplanes in accordance with the plans of a company whose interest is the development of public interest in the downs of Karlsruhe.

An Italian Aeroplane in Germany.

The Danish correspondent of The Aeroplane writes :—

On Oct. 6th the first Italian aeroplane landed in Germany. It was an Ansaldo biplane, fitted with a 300-h.p. Fiat engine, and alighted at 5 o'clock in Johannisthal with two officers on courier service to the Italian Consul in Berlin. They had left Rome some days before, flying on the first day via Venecia to Vienna and on in the afternoon to Warsaw, carrying out their orders. The non-stop flight from the Polish capital to Berlin took six hours. The machine was housed in the shed of the German Air Traffic Co. and was to return by air to Rome via Turin.

HOLLAND.

The Handley Page machine which was exhibited during the E.L.T.A. at Amsterdam left for Scandinavia on Oct. 21st, via the Dutch aerodrome of Soesterberg.

NORWAY.

The Danish correspondent of The Aeroplane writes :—

The Thulin-trained Norwegian pilot, Juhl, carried out joy-rides at a seaside resort near Copenhagen this summer with a le Rhone-engined diagonally-strutted Nielsen and Winther three-seater flying boat, till a special certificate was required for public flights. Then he intended to return to Norway by air, but after leaving Skagen a petrol pipe broke near the Norwegian coast. After drifting for twenty-two hours in Skagerak and Kattegat the flying boat stranded on a small island at the Swedish coast, rescued by a fishing motor-boat, the former assisting before getting anyhing to eat.

SPAIN.

The Barcelona Flying Meeting.

The Barcelona Flying Meeting took place on Oct. 12th. Among the machines were an Ansaldo (250 h.p. Spa), an Espagna (180 h.p. Hispano-Suiza), an Alfaro (180 h.p. Hispano-Suiza), a Vendome (60 h p. Le Rhone), a Caudron-type biplane G3 (80 h.p. Le Rhone), a Morane-Saulnier "Parasol" two-seater piloted by M. Bourgeois, and a Morane-Saulnier "Parasol" single-seater (110 h.p. Le Rhone), piloted by M. Fronval. M. Fronval and M. Bourgeois flew in a thick fog and succeeded in getting the first and second prizes respecively in the competition (a race over a circuit of about 66 miles. On Oct. 14th these two pilots flew to Madrid.

SWEDEN.

The Danish correspondent of The Aeroplane writes :—

At the request of the Swedish Hydraulic Department, the Swedish Air Traffic Co., Ltd., has worked out a detailed preliminary estimate for the establishment of an air connection between Porjus and Lilla Sjöfallet, where large hydraulic works are being carried out.

The heavy competition that the British aircraft trade has to stand to Germany owing to the present low mark value is evident from the estimate, as three seaplanes, with spares, of the Friedrichshafen type are calculated at kr. 170,000 (£9,445) against the cost of kr. 197,000 (£10,945) for three Short seaplanes of the sporting type—a difference of £2,500.

SWITZERLAND.

Permission to Fly.

Foreign aviators wishing to fly in Switzerland should apply to the Swiss Military Department at Berne, which is the only authority capable of issuing permits. All aeroplanes entering Switzerland are placed on a special register and if they are to remain in the country must have inscribed on the wings and fuselage the letters C. H. (for Confederation Helvetique) in white on a red base, and in addition the special registration number.

UNITED STATES OF AMERICA.

The Aerial Mail Service.

The Post Office authorities have made the announcement that it is intended to establish an aerial mail service from New York to San Francisco. A Bill has been introduced in Congress to give power to appropriate money for this purpose. It is said that the decision was arrived at as a consequence of the success (?) of the Army transcontinental air race.

AIRCRAFT IN PARLIAMENT

HOUSE OF COMMONS.

The following oral answers were given on Oct. 22nd :—

GOVERNMENT DEPARTMENTS (STAFFS).

Mr. GILBERT asked the Under-Secretary of State to the Air Ministry whether he will state what reduction in staff has taken place in his Department, including those employed at depots, since Nov. 11th, 1918; and whether he is taking any steps to make further reductions.

The UNDER-SECRETARY of STATE for AIR (Major-Gen. Seely) : I am not sure what my hon. friend means by "including those employed at depots," but I assume that this is to be interpreted as including all persons employed. Since Nov. 11th, 1918, the numbers employed by the Air Ministry at headquarters and depots have been reduced from 68,150 to 24,700 on Sept. 30th, 1919. These are approximate figures, since all returns are not made up to the same date. Further reductions have been made since Sept. 30th, and the process is continuing as rapidly as possible.

ROYAL AIR FORCE.

Mr. CLOUGH asked the Under-Secretary of State to the Air Ministry if he will inform the House what was the strength of the personnel of the Air Force on Oct. 18th; what it was on Aug. 12th, 1918; and what it was on the date of the Armistice.

Major-Gen. SEELY : The particulars asked for by my hon. friend as to the strength of the Royal Air Force on the dates mentioned by him are as follow :

	Officers	Other ranks.
Date of Armistice	30,122	263,410
Aug. 12th, 1919	9,044	39,671
Oct. 18th, 1919	6,005	31,976

An HON. MEMBER : Can he say whether all the anti-aircraft stations have now been abolished in this country?

Major-Gen. SEEEY : I could not say that without notice. It does not come under my Department, but under the Home Forces. It ought to be put down to the Secretary of State for War.

Sir W. JOYNSON-HICKS : How many women are included in that last total.

Major-Gen. SEELY : I could not say that without notice.

AIR FORCE (REVISED) ESTIMATES.

Mr. CHAMBERLAIN, replying to Mr. Arnold, said that he hoped that the Air Force Estimates would be presented early next month.

* * *

The following oral answer was given on Oct. 23rd :—

WOMEN'S ROYAL AIR FORCE.

The UNDER-SECRETARY of STATE for AIR (Major-Gen. Seely), replying to Lieut.-Comdr. Kenworthy, said that the numerical strength of the Women's Royal Air Force on Sept. 30th, 1919, was officers 164 and other ranks 5,800.

It is proposed to reduce the number of all ranks to 400 by Dec. 1st, and to 200 by January 1st, 1920. The number of female civil subordinates on the same date was 2,529.

* * *

The following answers were given on Oct 27th, and are extracted from the "Times" of Oct. 28th :—

A BRITISH AIRSHIP FOR AMERICA.

Major-Gen. SEELY, Under Secretary for Air, in reply to Colonel Moore-Brabazon, said :—Arrangements have been made between the United States Navy and the Air Ministry by which the airship R.38, embodying the newest features in design and construction, will be completed without delay. The vessel will be handed over to United States naval personnel on completion, and will proceed to America with her American crew as soon as the shed to house her is ready. The United States Navy will take over the vessel at cost price, the Royal Air Force undertaking the training of the American naval personnel, free of cost, except pay and rations

DESTRUCTION OF AEROPLANES.

Mr. A. T. DAVIES asked the Under Secretary of State to the Air Ministry whether large numbers of aeroplanes had been destroyed by burning in the occupied districts of France and Belgium; whether aeroplanes of the newest type were being delivered under contracts until the summer of this year; and whether the Canadian Government, adopting a different policy, disposed of similar aircraft with commercial advantage.

Major-Gen. SEELY, Under Secretary to the Air Ministry, said :—In answer to the first part of my hon. friend's question instructions have been given :—(a) That any aircraft declared obsolete for all purposes (i.e., Air Force and civil) shall be reduced to produce, and the produce handed to the Disposal Board; and (b) that any aircraft totally wrecked and beyond repair shall be reduced to produce, and the wreckage burned after the removal of all parts of value. The number of crashed aircraft burnt after the removal of the valuable parts under (b) has been 28. In addition, since July 1st, 1919, the residue of 259 crashed and 350 deteriorated or obsolete machines have been burnt after the valuable parts had been removed. The answer to the second part is in the affirmative. I have no official knowledge of the matter referred to in the third part of my hon. friend's question, but I think he has in mind a transaction carried out by the representative of the Ministry of Munitions in Canada on behalf of His Majesty's Government. If I am correct I would refer him to the Minister of Munitions.

THE GOVERNMENT AND CIVIL AVIATION.

Major-Gen. SEELY, replying to Colonel Burgoyne, said :—Whilst no direct subsidies are being made by the Government for the development of civil aviation, assistance is given to all firms desirous of receiving it in the following directions :—The free supply of meteorological information and free communication services (i.e., wireless, signals, flying directions, etc.). Arrangements are also in hand for the establishment of a system of emergency landing grounds throughout the country, which will be open to all firms who wish to make use of them At Government aerodromes, other than those required purely for Royal Air Force services, aerodrome facilities and shedding are available for all firms on lease, thus saving them a considerable proportion of the initial capital expenditure.

EXPENDITURE.

The following was contained in Table III—Estimated Expenditure—of the White Paper laid before the House of Commons by Mr. Austin Chamberlain on October 27th :—

	As estimated in the Budget.	As now estimated.	More or less than in the Budget.
Air Force	£66,500,000	£57,500,000	—£9,000,000

Air Services.—The reduction is due to the transfer of expenditure on winding up Aircraft contracts to the Vote for the Ministry of Munitions. Provision is made for increased pay of the Air Force (£100,000).

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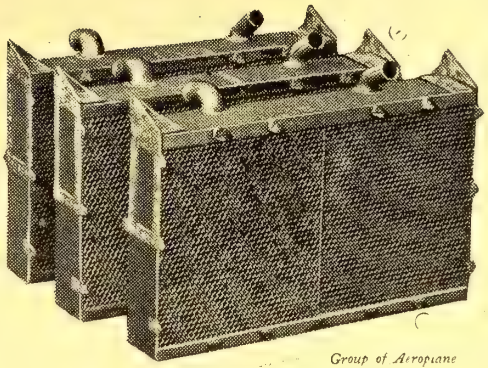

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1919.
STAND NO. 338.

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

War Office, Oct. 20th.

Regular Forces.—Infantry.—Service Battns.—W. Rid. R.—Temp. Sec. Lt. D. F. McColl (R.A.F.) to be temp. Sec. Lt., Oct. 11th, 1918.

Territorial Force.—Infantry.—6th Bn., Royal Welsh Fus.—Sec. Lt. I. S. Bellis to be Lt, and to remain secd R.A.F., May 1st.

War Office, Oct. 21st.

Regular Forces.—R F.C.—Mil. Wing.—Flying Officer.—Sjt. W. J. Beer (since killed), R.F.C., and to be temp. Sec. Lt., R.F.C., Gen. List, Nov. 25th, 1917. (Substituted for the notification in the "Gazette" of March 15th, 1918.)

Cavalry.—6th D. Grds.—Sec. Lt. J. H. B. Rygate (temp. Sec. Lt., R.A.F.) to be Lt., June 21st.

Infantry.—K.R. Rif. C.—Temp. Sec. Lt. P. C. Molland resigns his commn. on appt. to R.A.F., Nov. 8th, 1913.

Territorial Force.—Infantry.—5th Bn., Glouc. R—Sec. Lt. J. W. Davies to be Lt. and to remain secd. R.A.F., Feb 1st.

War Office, Oct. 22nd.

Regular Forces.—Gen. List.—Pilot Officer E. G. Masson, from R.A.F., to be temp. Lt. for duty as a Military Accountant Officer, June 12th.

Establishments.—The following temp. appts. are made:—Anti-Aircraft, Searchlight, and Sound Location School.—Instr.—Capt. (actg. Maj.) P. F. M. Michelli, R.E, from May 30th to July 1st. Asst. Instrs.—May 30th.—Capt. D. R. St. J. J. ffrench-Mullen, R.E., Temp. Capt. A. S. Millar, R.G.A. (substituted for the notification in "Gazette" of Aug. 28th, under "School of Electric Lighting").

War Office, Oct. 23rd.

The King has been pleased to give orders for the following appointment for valuable services rendered in connection with the defence of Kut-al-Amarah Dated June 3rd, 1919:—

Distinguished Service Order.

Capt. S. C. W. Smith, E. Surr. R., Spec. Res., and R.A.F.

War Office, Oct. 23rd.

Regular Forces.—Establishments.—R.F.C.—Mil Wing.—The following appt. is made:—Flying Officer.—Temp. Sec. Lt. (on prob.) E H. Bullen, Gen. List, and to be confirmed in his rank, Feb. 18th, 1918.

Royal Regiment of Artillery.—R.H. and R.F.A.—Lt. J. A. G. Haslam, M.C., D.F.C., resigns his commn on appt. to the R.A.F., Aug. 1st.

War Office, Oct. 24th.

Regular Forces.—Establishments.—R.F.C.—Mil. Wing.—Notification regarding Lt. (temp. Capt.) R. O. C. Bush (R. Dub. Fus.), in "Gazette," Oct. 3rd, is cancelled.

AIR FORCE.

Air Ministry, Oct. 14th

Pilot Officer R. McG. Freemantle relinquishes the grading for pay and allowances as Flying Officer, Grade (A.), Sept. 17th.

Sec. Lt. (Hon. Lt.) W. L. Head to be Lt, without pay and allowances of that rank, Nov. 24th, 1918.

Pilot Officer W. H. Lowther to be Flying Officer, without pay and allowances of that rank, Aug. 5th.

Pilot Officer N. F. S. Hecht to be Pilot Officer, Grade (A.), from (Ad.), Sept. 8th.

Pilot Officer C. P. Brown to be Pilot Officer, Grade (B.), from (Ad.), Sept. 8th.

Pilot Officer W. T. T. Glassbrook to be Pilot Officer, Grade (B.), from Grade (A.), Oct. 8th

The following relinquish their commns. on ceasing to be empld.:—Capt. R. C. Gill (Capt., R.G.A.), Aug 27th; Lt. E. F. L. Taylor (Devon R.), Aug. 31st.

The following are transferred to the unempld. list:—Sec. Lt. (Hon. Lt.) A. K. H. Maitland, April 19th (substituted for notification in the "Gazette" of Aug. 8th); Sec. Lt. J. W. Cruickshank, May 5th; Lt. T. T. Murray, July 2nd; Sec. Lt. J. W. Lockhart, Aug. 2nd; Capt. J. B. R. Swan, M.B.E., Aug. 16th; Sec. Lt. D. W. Genge, Capt. S. S. Hatfield, Aug. 27th; Lt. N. E. Corbishley, Aug. 29th; Sec. Lt. J. Corrall, Lt. G. M. Garro-Jones, Sept 1st; Sec. Lt. R. R. Wilson, Sept. 2nd; Lt. A. H. Sippe, Lt. T. Willis, M.B.E., Sept. 3rd; Capt. A. Garrard, Sept 4th; Sec. Lt. E. Haghe, Sec Lt. (Hon. Lt.) P. Jeffery, Lt. S. N. Veitch, Sept. 9th; Sec. Lt. T. McClelland, Sept. 11th; Capt. F. M. Davies, Lt. J. H. Secker, Sept 14th, Sec Lt. D. Lidderdale, Sept. 15th; Sec. Lt. A. M. Davies, Sept. 16th, Sec. Lt. H. H. Williams, Sept. 18th; Sec Lt. E. F. Fardon, Lt. G. E Thomas, Sec. Lt. C. R. Tweeddale, Sept. 20th; Capt. E. A. B. Tooth, Sec. Lt. J. Turnley, Sept. 22nd; Sec. Lt. F. S. McRae, Lt G. Smart, Sept. 23rd; Lt. M. B. K. Egan, Sept. 24th; Lt. M. H. MacLucas, Sept. 26th; Sec. Lt. J. T. Lawlor, Sept. 29th; Lt. A. B. Smith, Sept. 31st; Sec. Lt. (Hon. Lt.) P. L. Lindup, Oct. 6th; Capt. W. Calder, Lt. R. C. Nicholls, Oct. 9th; Capt. J A. Cowling, Oct. 10th.

Lt. H. W. Durtnell relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Oct. 8th.

Sec. Lt. W. A. Murphy relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 8th.

Medical Branch.—Lt. D. Pennington is transferred to the unempld. list, Sept. 27th.

Dental Branch.—The following are granted temp. commns. as Lts.:—G. H. Warner, May 20th, 1918 (substituted for notification in "Gazette," May 21st, 1918, in which he is shown under "Medical" Branch); C. Murray-Shirreff, June 6th, 1918 (substituted for notification in "Gazette," June 7th, 1918, in which he is shown under "Medical" Branch); C. M. John, July 18th, 1918 (substituted for notification in "Gazette," July 26th, 1918, in which he is shown under "Medical" Branch); W. Inman, Oct. 25th, 1918 (substituted for notification in "Gazette," Oct. 29th, 1918, in which he is shown under "Medical" Branch).

Chaplains' Branch.—The following are transferred to the unempld. list:—The Rev. P. G. Levy, May 31st; the Rev. J. M. Wood-Smith, M.A., Sept. 22nd.

Memoranda.—Pilot Officers to be Flying Officers:—F. A. Holmes, Aug. 27th; E. A. Cogswell, Oct. 1st.

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain rank from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases:—1048034 F. R. Ames, 506415 H. J. Barrand, 500366 M. C. Boyd, 2040162 G. H. Dawson, 110141 C. H. Dowd, 2542305 A. F. Duncan, 2228322 A. Either, 100215 R. D. Evans, 1262009 G. W. Jones, 2201150 R. Lake, 506177 F. G. Leslie, 339625 J. F. Lyons, 763003 E. P. Magee, 202089 J. S. Martin, 436310 R. F. Martin, 252352 J. McD. Minifie, 339520 T. D. McFarlane, 207924 F. T. Perry, 494 C. F. Peterson, 2265891 E. C. Peterson, 534693 C. Roberts, 637059 W. A. Rose, 507715 J. McD. Simpson, 1012808 T. H. Wallace, 2584301 H. H. Weese.

The following relinquish their commns on ceasing to be empld.:—Capt. J. Williams (Qrmr. and Capt., D of Corn. L.I.), Oct. 1st; Maj. H. M. M. Robertson, O.B.E., M.C. (Maj., R.R.A.), Oct. 6th.

Temp. Hon. Lt. H. Yates relinquishes his commn. on ceasing to be empld., Oct 7th.

The following are transferred to the unempld. list:—Capt. E. G. Walker, from (S.O.), Aug. 31st; Lt. C. J. Walters, Sept. 12th; Capt. L. Reynolds, from (S.O.), Sept. 24th.

The Christian names of 37699 Cadet Albert Henry Barlow are as now described, and not Arthur Thomas Barlow as stated in "Gazette" of July 15th.

Air Ministry, Oct. 17th.

R.A.F.—The undermentioned temp. appointment is made at Air Ministry:—Staff Officer, 3rd Class.—(T.) Flying Officer T. Kerr-Jones, Sept. 29th.

Air Attaché.—Sqdn. Ldr. J. P. C. Sewell, O.B.E., Sept. 25th.

Flying Branch.—Capt. N. G. Stewart-Dawson, D.S.C., to be actg. Maj. whilst Maj. (A. and S.), May 17th; Capt. H. L. H Owen, A.F.C., graded for pay and allowances as Maj whilst Maj (A.), May 1st to June 30th; Capt. F. L. C. Butcher graded for pay and allowances as Maj. whilst Maj. (A'ship), May 1st, Capt. (actg. Maj.) K. B. Harbord to be Capt. (A.), from (S.O.), and relinquishes actg rank of Maj. on ceasing to be empld., Oct. 5th, 1918 (substituted for "Gazettes" July 15th and Sept. 23rd); Lt. W H. Park, M.C., to be actg. Capt. whilst empld. as Capt. (A.), May 17th.

2nd Lts. to be Lts.:—W. D. Redmond, June 1st; R. Bretherton, Nov. 8th; E. C. Crouch, Dec. 27th, 1918; A. C. James, June 13th, 1919; Pilot Officer T. P. T. Jones to be Flying Officer, Sept. 14th; 2nd Lt. G. A. Osborne (late Gen. List, R.F.C., on prob.) confirmed as 2nd Lt. (O.), July 10th, 1918; 2nd Lt. L. Hudson to be 2nd Lt. from unempld. list, May 20th, with precedence next below 2nd Lt. Thomas Smith (Obs.), Lt. J. E. Periera relinquishes commn. on reversion to I.A.R.O., Oct. 9th.

The following relinquish their commns. on ceasing to be empld.:—Lt. L. Patterson, M.C. (Lt., R. Art.), April 11th; Lt. R F. L. Bush (Lt., R. Art.), May 2nd; 2nd Lt T. B. Anderson, May 9th; Lt. J. O. Leach, M.C (h.p. list), June 28th; Capt. J. Selwyn (Capt., R. Art.), Sept. 23rd; Capt. C. Patteson, M.C., A.F.C. (Lt., S. Wales Bord.), Oct. 4th; 2nd Lt. S. W. P. Foster-Sutton (Lt., E Kent R.), Oct. 8th.

Transferred to unempld. list:—Capt. H. F. Beamish, D.S.C., Jan. 4th, Feb. 1st; 2nd Lts. J E. Beolchi, R. F. Burnett, D W C. Derby, R. H. Ellard, N. H. Glaad, F. W. Glasby, D. A. Goodine, R. E. Harrington, E. H. Jones, T B Kelly, E. Laycock, A. C. Stronge, V. H. Summers, A. L. Veale, J. E. Waller, E. E. Watts, F H Woodman, D. Wyman, Lt V. G. Odling, Feb 18th; Sec. Lt. G. M. P O'Keefe, Feb. 25th; Lt. P. H. Moody, Feb. 28th; Lt. E. A. Magee, March 10th, March 15th; Lt. G. W. Curtis, 2nd Lt. J. H. Kennedy, Lt. J. A. M. Robertson, Lt. G. S. Harvey, March 20th; Lt. G. C. W. Dingwall, March 21st; 2nd Lt. E. G. Gallagher, April 1st; Lt. D. J. Hugh-Jones, April 8th, April 17th; 2nd Lt. W. C. S. Smith, 2nd Lt. G. K Smith, M.C., Lt. E. C. Hoy, D.F.C., April 19th; 2nd Lt. J. C. Malcolmson, April 21st; 2nd Lt. W. S. Page, April 24th, April 30th; 2nd Lt. J. R. I. Farquharson, Lt. I. W. Lieperd, D.F.C., 2nd Lt. A. Taylor, May 10th; Lt. R. S Larkin, M.C., May 17th; Lt. M. E. Miller, May 19th; Lt. W. H. Comstock, May 21st; 2nd Lt. William Turner, May 23rd; Capt. C. M. Crowe, M.C., D.F.C., May 25th; 2nd Lt. R G. Pigeon, May 28th, June 1st; Lt. H. N. Compton, D.F.C., 2nd Lt. W. G. F. Grant, Lt. H. J. Whittingham, July 4th; 2nd Lt. M. D. Sinclair, July 9th, July 10th; 2nd Lt J. Blair, 2nd Lt. W. H. Todd, 2nd Lt. C. W. Wright, July 12th; 2nd Lt. A. R. Lee, 2nd Lt. W. W. Smith, Lt. K. Bon, July 28th; Lt M E. Ashton, Aug. 1st; 2nd Lt. C E. Sherwood, Aug. 7th; Lt. G. E. Hicks, Aug. 9th; Lt. T. W. Kerr, Aug. 19th; Lt. G. A. Flavelle, D.F.C., Aug 22nd; 2nd Lt. (Hon. Lt.) A. W. Allan, Aug. 23rd (substituted for notification in "Gazette," Aug 26th), Aug. 27th; 2nd Lt. J. E. Fox, Lt. W. E. G. Mann, D.F.C., 2nd Lt. D. H. Godden, Aug. 30th; 2nd Lt. W. K Young, Sept. 3rd; 2nd Lt. C. H. Smith, Sept. 4th; Lt. M. E. Faithfull, Sept 5th, Sept 6th; Capt. D. M. Faure, Lt. G. W. Nelson, 2nd Lt. M. B. Glover, Sept. 7th; 2nd Lt. S. Jones, Sept. 8th, Sept 9th; Lt. G. M. Emerson, Lt. R. J. Gammon, D.F.C., 2nd Lt. A. L. Farmer, Sept. 10th, Sept 11th; Lt. C. C. Connochie, Capt. A. Goodfellow, Lt. F. C. Gorringe, M.C., D.F.C., 2nd Lt. (Hon. Lt.) H. E. R. Ford, M.C., Sept. 12th; 2nd Lt. H H. Weeks, Sept. 13th; Capt. E. J. L. W. Gilchrist, M.C, D.F.C., Sept. 14th, Sept. 15th; 2nd Lt. G. R. Edwards, Lt. T. A. Ford, Lt. D. S. Fox, 2nd Lt. P. P. W. Whelan, Lt. S. G. Williams, Sept. 16th, Sept 17th; Lt. W. D. Littlewood, Lt. A. Richards, 2nd Lt. H. V. Evans, Sept. 18th, Sept. 19th; Capt. H. A. Furniss, D.S.C., 2nd Lt. T. L. Gann, Sept. 20th; Lt. J. A. Barnes, Lt. R. R. Bentley, Lt A. R. Fairbairn, D.F.C., Lt. W. T. Ward, Sept. 24th; Lt M E. Bradley, 2nd Lt. E. G. Carter, Lt. W. W. Dingle, Lt. J. B. Edwards, Capt. A. B. Fanstone, A.F.C., Lt. A. P. Godfrey, Sept 25th; 2nd Lt P. J. Baker, 2nd Lt I. G Best, 2nd Lt. R. D. Butler, 2nd Lt. C. H. E. Coles, 2nd Lt. F. W. Dey, 2nd Lt. (Hon. Lt.) A. Dunton, Lt. A. D. MacMillan, Lt. (Hon. Capt.) J. C. Wolley-Dod, Sept. 26th; 2nd Lt. W. Berry, 2nd Lt. S. D. Blanchard, Lt. N. Braithwaite, Lt V. A J. Clark, Lt. E C. Moon, Capt C. Seedhouse, Lt. A. R. Turpin, Lt. R. B. Wainwright, Sept. 27th; Lt. P. Anderson, Lt. H. W. Auerbach, 2nd Lt. E. L. Edwards, Capt. C. H. Gardner, A.F.C., Lt. (Hon. Capt.) G G. Roberts, M.C., Sept. 28th; 2nd Lt. A. D. Geiger, 2nd Lt (Hon. Lt.) C. J E. Malet-Veale, 2nd Lt. D. A. Martin, 2nd Lt. R. G. K Morrison, Lt A. Rutherford, Sept. 29th; 2nd Lt. A. H. Allingham, 2nd Lt. W. R. Stewart, Lt F. C. Fowkes, Sept. 30th; 2nd Lt. H. M Fletcher, Oct. 2nd; Lt. A. D. Stubbs, Oct. 8th, Oct. 10th; 2nd Lt. W Coutts, Lt. M. T. Stanley, Oct. 11th; 2nd Lt L. D. Jacobs, 2nd Lt R. R. H. Picot.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—F B. Harland (caused by wounds), Oct. 2nd; D. M. Murdock (contracted on active service), Oct. 6th; W. Biheller, Oct. 8th; 2nd Lt. R. Leask (Lt., H.L.I., T.F.) relinquishes his commn. on account of ill-health (caused by wounds), granted the rank of Lt., Oct. 6th; 2nd Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—S. J. Bolitho, June 25th (substituted for "Gazettes" of March 14th and July 1st); W. H. Saunders (contracted on active service), July 12th (substituted for "Gazette" July 15th); C. T. Skipper, Oct. 10th; 2nd Lt. W. H. Perks resigns commn., Oct. 18th

2nd Lt. L. F. Ross antedated in appointment as 2nd Lt. (A. and S.), to May 5th, 1918; 2nd Lt. R. R. Nelson antedated in appointment as 2nd Lt. (A. and S), to May 26th, 1918.

The initials of Flt. Lt. P. J. H. Sumner are as now described, not P. J., as stated in "Gazette," Sept. 26th.

The rank of Lt. T. R. Adair is as now described, not 2nd Lt. as in "Gazette," Sept. 19th.

The notification in "Gazette," May 23rd, concerning 2nd Lt. T. B. Anderson is cancelled.

The notification in "Gazette," July 8th, concerning Lt R. T. Percival is cancelled.

The notification in "Gazette," July 29th, concerning 2nd Lt. H. P. Brummell is cancelled.

Administrative Branch.—Lt. (Hon. Capt.) C. W. A. Millar is graded for pay and allowances as Maj. whilst empld as Maj., Dec. 21st, 1918

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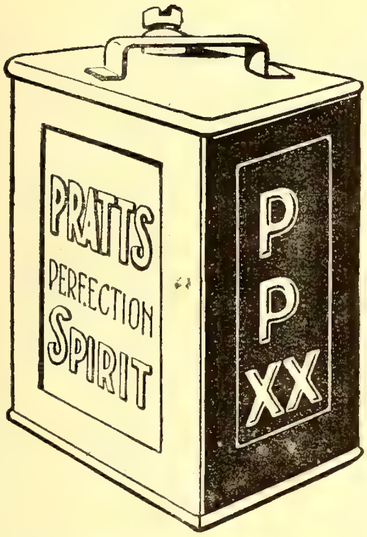

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(substituted for notification in "Gazette," May 27th); Capt. F. E. Hellyer, O.B.E., graded for pay and allowances as Maj. whilst empld. as Maj., May 1st to June 24th.

Flt. Lts. (S.O.) to be Flt. Lts. :—R. Belli-Bivar, M.B.E., Sept. 9th, Sept. 22nd; H. B. Kavanagh, M.B.E., R. R. L. L. Thom, Lt. F. W. H. Durrant graded for pay and allowances as Capt whilst empld. as Capt., from (T.), March 6th to Aug. 16th (substituted for notification in "Gazette," Sept. 23rd); Flying Officer T. Gibson to be Flying Officer from (S.O.), and graded for pay and allowances as Flt. Lt. whilst specially empld., Sept. 15th; Lt. C. G. Stewart to be Lt., from (A.), April 17th; Flying Officer J. E. Doyle, D.F.C., to be Flying Officer, from (A.), Sept. 25th.

Flying Officers to be Flying Officers, from (S.O.) :—J. C. Barraclough, Sept. 15th; R. J. Slade, Sept. 22nd; 2nd Lt. R. R. W. Millward to be Lt., Aug. 21st; Pilot Officer E. Higgs to be Flying Officer, Sept. 9th; 2nd Lt. Horace Fenn Turner to be 2nd Lt., from (K.B.), April 17th (substituted for notification in "Gazette," June 27th; 2nd Lt. (Hon. Capt.) F. C. Marsh (Maj., Hussars) relinquishes his commn. on ceasing to be empld., Oct. 11th.

Transferred to unempld list :—2nd Lt. Z. Braun, Dec. 24th, 1918; 2nd Lt. T. B. Laurence, May 1st, 1919; Lt. G. T. Stoneham, June 12th; Lt. D. Miller, June 21st; 2nd Lt. J. W A. Legge-Willis, July 10th; Lt. L. C. Messister, July 16th (substituted for notification in "Gazette," Aug. 22nd); Lt. J. H. Firstbrook, July 18th; Lt. F. A. Watson, Aug. 27th; 2nd Lt. J. H. Edgelow, Sept. 2nd; Lt. O. J. Gagnier, Sept. 5th; 2nd Lt. B. J. M. Dumas, Sept 9th, Sept. 18th, Lt. T. N. Anderson, Lt. H. A. Birks (substituted for notification in "Gazette," June 10th); Lt. W. J. C Gibson, Sept. 19th; Lt. (Hon. Capt.) J. F. Dawson, 2nd Lt. C. H. Gauntlett, Capt. F. E. Vaughan, Sept. 20th; Lt. L V. Boxer (substituted for notification in "Gazette," Oct. 7th); Lt. J. P. Greenwood, Lt. H. M. Giles, Sept. 24th, Sept. 25th; Lt. S. F. R Hulbert, Lt. E. S. B Tavener, Lt. A. J. Croft, M.C., Sept. 28th; Lt. G. H. Carbutt, Oct. 7th; 2nd Lt. R. G. Smith, Oct. 10th; Lt. A. R. Barnes, Oct. 20th.

Lt. A. B. Kinnair relinquishes his commn. on account of ill-health, and is granted rank of Capt., Oct. 10th.

Lt H. C. R. Milward (R.H A., T.F.) relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Sept. 24th (substituted for notification in "Gazette," Sept. 30th)

The notification in "Gazette," Aug 2nd, 1918, concerning 2nd Lt. G. H. Tait is cancelled.

The notification in "Gazette," Aug. 15th, concerning 2nd Lt. W. W. Smith is cancelled.

The notification in "Gazette," July 8th, concerning 2nd Lt. F. A. A. Hewson is cancelled.

Technical Branch.—Capt H. R. Lecomber, O.B.E., is graded for pay and allowances as Maj. whilst empld. as Maj., Grade (A.), May 1st; Flt. Lt. M V Wrigley to be Flt Lt., Grade (A), from (S.O.), Aug. 1st (substituted for the notification in "Gazette," Sept. 23rd); Lt. S. W. Bryant is graded for pay and allowances as Capt. whilst empld. as Capt., Grade (A), Nov. 26th, 1918; Flying Officer F. J. Cooke graded for pay and allowances as Flt. Lt. whilst empld. as Flt. Lt., Grade (B), from (S.O.), Sept. 22nd; Lt. A. Bushfield is graded for pay and allowances as Lt whilst empld. as Lt., Grade (A), July 1st; Flying Officer W. J. Standish is graded for pay and allowances as Flying Officer whilst empld. as Flying Officer, Grade (A), Aug. 8th to Sept. 11th; Lt. P. A. Wright to be Lt., Grade (B), from (Ad.), June 12th; Lt. W. W. McDonald is graded for pay and allowances as Lt. whilst empld. as Lt., Grade (B), May 24th; 2nd Lts. graded for pay and allowances as Lts. whilst empld. as Lts., Grade (A) :—H. J. Adkins, May 1st to Sept. 11th; J. H. Dann, June 11th.

Pilot Officers to be Flying Officers, without pay and allowances :—C. A. Cordeaux, Sept. 11th, Oct 1st; E. Parrett, S A Smith.

Sec. Lts. (Ad.) to be Sec. Lts., Grade (A) :—E. T. Fielding, Nov. 28th, 1918; L. T. Bulmer, March 20th, 1919.

Transferred to Unempld. list :—Sec. Lt. (Hon. Lt.) R S. Clifton, March 2nd; Sec. Lt. F. S. Willsie, May 15th; Capt. P. W. Goodchild, May 28th; Sec. Lt. (Hon Lt.) C. E. Day, Aug. 1st; Sec Lt. C. S. Crocker, Aug. 21st; Lt. D. W. Edmonds, Aug. 29th; Sec. Lt. R. A. Ford, Aug. 30th; Sec. Lt. C. J. French, Sept. 2nd; Lt. E. A. Verpilleux, M.B.E., Sept. 5th, Sept. 8th; Lt. W H. Evans, Sec. Lt. H. Gamage, Capt. J. O. Nichol, Lt. T. A. Roberts, Actg. Lt. W. A. Fowler, Sept. 12th; Sec. Lt. J. A. Peoples, Sept. 16th; Lt. J. Y. De la Cour Elliott, Sept. 17th, Sept. 19th; Maj. R. F. S Cotton, Lt. A R. Langton, Sec. Lt. W. Daughton, Sept. 24th, Sept. 25th; Lt. H. G Gregory, Sec. Lt. A. E. Williams, Lt. A. L. C. Fuller, Sept. 26th, Sept. 27th; Lt. H. G. Burroughs, Capt. J. Reed, Sec. Lt. P. C. Thornton, Sept. 28th, Sept. 29th; Sec. Lt. H. V. Bullock, Lt. M. L Dobbin, Sept 30th; Lt.-Col. W. H. Lang, O.B.E., Sec. Lt. W. E. Wells, Oct. 1st; Lt. S. P. Elliott, Sec. Lt. (Hon. Lt.) R. R. Fensom, Lt. R. F. Malabar, Oct. 5th; Sec. Lt. G. K. Lindsay, Oct. 9th; Sec. Lt. H. S. M. Coster, Oct. 13th; Actg. Maj. D. G. Nairn, O.B.E. (R.A.S.C., T.F.) relinquishes his commn. on account of ill-health, and retains the rank of Maj., April 26th (substituted for notification in "Gazette," April 25th).

The notification in "Gazette," April 29th, concerning Sec. Lt. C. W. O'Brien is cancelled.

Medical Branch.—Lt.-Col. G. N. Biggs (Maj, R.A.M.C., T.F.), from unempld. list, to be restd to estabt without pay and allowances, Aug 13th; Flying Officer R. G J. McCullagh to be Flt. Lt., Aug 14th

Transferred to unempld. list :—Capt. W. P. Whippell, April 28th; Actg. Lt.-Col. J. L Bailey, O.B.E., Oct. 7th; Actg. Lt.-Col. H. C. T Langdon, O.B.E., Oct. 10th.

Dental Branch.—Flying Officer L. Wigoder to be Flt. Lt., Oct. 7th; Capt. R Fyson transferred to unempld. list, Sept. 20th.

Memoranda.—Pilot Officer W. J. Bray to be Flying Officer, Oct. 1st.

Cadets granted hon. commns. as Sec. Lts. :—F. F Harvey, Jan. 13th; A. A. Morland, Jan. 17th; W. E. D. Clark, Jan. 19th; W F. Mutton, Feb. 4th; H. Cotton, Feb 8th; R. Carhart, Feb 12th; H Freedman, Feb. 25th; H. E. Mabin, March 4th; T. C. Lonie, March 13th; E. S. Taylor, March 21st; D. B. Parsons, March 22nd; R. Mortimer, March 27th; H. A. Jacobs, April 15th; G. T T. Morris, April 17th; H. M. Crowther, April 24th; L. J. Rumsey, April 27th; J Dixon, May 2nd; A. Nobbins, May 3rd; W H. Denham, May 16th; P.F.O F. C. Edwards, June 17th; H J. Bailey, June 19th; E. W Twamley, July 1st.

Capt. R L. S. Raffles is transferred to unempld list, from (S.O.), Sept. 13th.

Temp. Hon. Lts. relinquish their commns. on ceasing to be empld., Sept. 16th :—K. N. Barnes, A J. Bohringer, F E. Coles, F. J. Crinage, F. A Crouch, C. H. Grace, H. Petrie, W. A Pett, W. W Purves, R. E. Tiffin.

The notifications in "Gazette," Aug. 26th, concerning the undermentioned Officers are cancelled :—Sec. Lts. M L. Bisson, J. H F. Hock, G. T. Horne, W. E. May, E. Moorland, L. M. Montgomery, S. J. Livingstone.

Air Ministry, Oct. 21st.

R.A.F.—Permanent Commissions.—The notification appearing in "Gazette" of Aug. 1st appointing the following Officers to permanent commns. is cancelled :—Maj. T. S. Impey (A.), Maj. J. S. Mills, D.S.C. (A.), Maj. E. H. M. O'Farrell (A.), Capt. H. F. Delarue, D.F.C. (A.), Capt. C. T. MacLaren, O.B.E. (A.), Capt. E. M. Pollard (A.), Capt. G. T. Porter (A.), Lt. H. de V. Leigh, D.S.C. (A.), Lt. J. F. Nalder (Ad.), Lt. T. Roberts (A.), Lt. J. S. C. Robinson (O.).

The notification in "Gazette" of Aug. 22nd appointing Lt.-Col. O. H. K. Maguire, D.S.O. (A.), to a permanent commn. is cancelled.

The initials of Maj. P. R. Burchell are as now described, and not "R. P.," as stated in "Gazette" of Aug. 1st.

The surname of Lt. C. C. Bazell is as now described, and not "Bazzell," as stated in "Gazette" of Aug. 1st.

The notification in "Gazette" of Sept. 5th concerning Capt. F. E. P. Barrington is cancelled (the notification in "Gazette" of Aug. 1st is to stand).

The name of Lt. M. Minter is as now described, and not Lt. M. Minter, M.C., as stated in "Gazette" of Aug. 1st.

The name of Capt. C. H. Elliott-Smith is as now described, and not Capt. C. H. Elliott-Smith, M.C., as stated in "Gazette" of Aug. 1st.

The classification of Lt. A. S. Thompson is (Ad.) and not (A.) as stated in the "Gazette" of Aug. 1st.

The date of appointment of Lt. J. Whitford to a permanent commn. is Aug. 16th, and not "Aug. 1st" as stated in the "Gazette" of Aug. 1st.

The following temp. appointments are made at the Air Ministry :—Staff Officer, 1st Class.—(Air.)—Maj. G. J Watney, March 25th, and to be actg. Lt.-Col. until April 30th. (Substituted for the notification in the "Gazette" of June 20th.)

Staff Officer, 2nd Class.—(Air.)—Capt. W. E. G. Bryant, March 25th, and to be actg. Maj. until April 30th. (Substituted for the notification in the "Gazette" of June 20th.)

The following temp. appointments are made :—Staff Officer, 2nd Class.—(T.)—Sqdn. Ldr. F. Jolly, from Aug. 15th to Sept. 19th.

Staff Officers, 3rd Class.—(Air.)—Flying Officer (actg. Flt. Lt.) O. R. Gayford, and relinquishes the actg. rank of Flt. Lt., Sept. 22nd. (P.)—Flt. Lt. A. McR. Moffatt, Oct. 13th. (Q.)—Sec. Lt. W. A. Glasper, June 12th.

Flying Branch.—Wing Comdr. I. T. Courtney, C.B.E., to be Wing Comdr. (A.), from (S.O.), Oct. 1st.

Sqdn. Ldr. Sir N. A. R. D. Leslie, Bart., C.B.E., to be Sqdn. Ldr. (A.), from Air Attaché, Sept. 25th.

Flt. Lt. D. S. Earp to be actg Sqdn. Ldr. whilst empld. as Sqdn. Ldr (O.), Aug. 1st to Oct. 11th

Capt. M. Henderson, D.S.O., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj. (A.), from June 17th to July 31st.

Flt. Lt. H. I. Hanmer, D.F.C., to be Flt. Lt. (O.), from (S.O.), Sept. 1st.

Lt. R. E. Butler to be actg. Capt. whilst empld. as Capt. (A.), from Dec. 1st, 1918, to April 25th.

The following Lts. are graded for purposes of pay and allowances as Capts whilst empld. as Capts. (A.) :—R. S. Capon, to July 31st; L. C. Pockney, May 1st; W. Jones, June 13th.

Lt. F. R. Hockney relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt (A.), June 3rd.

The following Flying Officers relinquish the grading for pay and allowances as Flt. Lts. on ceasing to be empld as Flt. Lts. (A.) :—A. A. Leitch, M.C., D.F.C., Sept. 5th; W. S. Reid, Sept. 6th; E. W. White, Sept. 25th.

The following Flying Officers (actg. Flt. Lts.) relinquish the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lts. (A.) :—(Hon. Flt. Lt.) L. N. Sutherland, Sept. 1st; L. Clarke, Sept. 4th; A. J. C. Styran, M.C., Sept. 19th.

Flying Officer V. Stranders to be Flying Officer, from (S.O.), Sept. 8th.

Sec. Lts. to be Lts. :—(Hon. Lt.) G. E. Clavey, July 22nd, 1918; A. J Rankin, Sept. 10th, 1918; E. E. Taylor, Oct. 13th, 1918; W E. J. Bloodworth, Sept 27th, 1918; S. T. Crowe (since reclassified to Admin.), April 25th; W. J. Millen, June 30th; P.F.O F. B. Candy (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (A and S.), Sept. 27th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Capt. (Capt., R.W. Surr. R.) L. M. Boddan-Whetam, from (S.O.), Aug. 28th; Sec. Lt. L. E. G. Judge (Sec. Lt., L.N. Lancs. R.), Aug. 29th; Sec. Lt. D. W Clarke (Lt., R F A.), Sept. 17th; Maj. G. Henderson (Maj., Indian Army), Sept. 18th; Lt. E. V. C Hamilton (Lt., Wors R.), Sept. 19th; Lt. R. G. Lewis (Lt., S. Wales Bord.), Sept. 20th; Lt (Hon. Capt.) H. A. Courtenay, D.F.C. (Capt., R.A.S.C.), Lt. P Gurrey (Lt., Suff. R.), Sept. 25th; Lt. (Hon. Capt.) C. F. Yarde (Capt., R.A.S.C.), Sept. 26th; Lt. A. C Jelf (Sub-Lt., R.N.), Oct. 1st; Capt A Howe (Capt., R.W. Kent R.), Oct. 4th; Capt. D. R. Hanlon (Capt., R.G.A.), Oct. 7th; Lt E. E. S. Wheatley (R.W. Surr. R.), Oct. 9th; Lt. E. V. A. Bell (Lt., Hamps R.), Oct. 13th; Lt. C. G. Stewart (Lt., R Scots Fus.), Oct 14th; Lt. (Hon. Capt.) T. A. Francis (Capt., R. Ir. Regt.), Oct. 15th.

Transferred to unempld. list :—Capt. G. H. Simpson, Jan. 24th (substituted for notification in "Gazette," Feb 25th, wherein this officer's rank was stated to be Lt. (Hon. Capt.)) Sec. Lt. R. D. Chalmer, Sec. Lt. A. M. Crawford, Sec. Lt. F. J. Ham, Sec. Lt. H. D. Hoolihan, Sec. Lt. F. Kerr, Sec. Lt. J. C. Long, Sec. Lt. C. M. Loves, Sec. Lt. C A. McGillivray, Sec. Lt. D M. MacKenzie, Sec. Lt. L. F. Patterson, Sec. Lt. L. D. Squair, Sec. Lt. G. P. Smith, Sec. Lt. D. E. Woolard, Feb. 1st; Sec. Lt. S. E. Storey, Feb 8th; Sec. Lt W. Pendleton, Feb. 24th; Sec. Lt F A Lewis, Feb. 29th; Lt. G. H. Bush, Sec. Lt. (Hon. Capt.) P. S. Page, M.C., March 1st; Lt. W. F. S. Purvis, March 5th; Sec. Lt. E. R. Petts, March 6th; Sec Lt (Hon. Lt.) R. Esterbrook, March 11th; Lt R. B. Smith, April 1st; Sec. Lt. A Lawlor, April 10th; Sec. Lt. C. R Cooke, April 14th (substituted for the notification in the "Gazette" of Sept. 12th); Sec. Lt L. T. Lawrence, April 16th; Lt. A. Eckley, Sec. Lt. M. G Larder, April 19th; Sec. Lt F. Smith, April 20th; Lt. H C Taylor, April 22nd; Sec. Lt. J. P. Gilbert, May 8th; Sec. Lt. K. E. M. Holmes, Sec. Lt. (Hon. Lt.) T. W. Watts (substituted for the notification in the "Gazette" of June 6th), Sec. Lt. T. A. Woodward, May 13th; Sec. Lt (Hon. Lt.) F. Smith, May 15th; Sec. Lt. C. G. Brennard (substituted for the notification in the "Gazette" of May 20th), Sec. Lt. T. P. Forrester, Sec. Lt S. Kenna, May 20th; Lt. H. O. Irwin, May 27th; Sec. Lt. C. E Mallone, June 1st; Lt. P. H Clarke, June 11th; Sec. Lt H. W Gill, June 13th; Sec. Lt. A. E. Eastes, June 24th (substituted for the notification in the "Gazette" of June 27th); Sec. Lt F. E King, July 12th; Sec. Lt. G. C. Upson, Aug. 2nd; Lt. H V. Robins, M.C., A.F.C., Aug. 14th; Sec. Lt. J. E. Hernon, Aug. 15th; Lt. E J. Stephens, Aug. 16th (substituted for the notification in the "Gazette" of Aug. 15th); Lt. C. E. V. Graham, M.C., Aug. 29th; Lt. W. H. Thompson, Aug. 30th; Sec. Lt. H. A. Griffiths, Sept. 1st; Sec. Lt. L. R Griffin, M.M., Sec. Lt. W. Hall, Sept. 2nd; Lt. H. P. Guard, Lt. J. H Leavesley, Lt. (Hon. Capt.) C. C. Snow, D.F.C., Sept. 3rd, Sec. Lt. W. M. Hall, Lt W. F. H Harris, Sec. Lt. F. W. Loug, Sept. 4th; Sec. Lt. L. A Gray, Lt. F. A. W. Handley, Sec. Lt. F. A. Lawson, Lt. (Hon. Capt.) A P. Mitchell, Sec. Lt. D. L. Townsend, Sept. 5th; Sec Lt. A. F. Legg, Lt. G. R. T. Marsh, Sept. 6th; Sec. Lt. L S. Mersh, Lt. J. R. Statter, Sec Lt. H M. Thompson, Sept. 7th; Sec. Lt. A. H. Lumsden, Sec. Lt. C. E. Sunnucks, Lt. G. F. Thomas, Sept 8th; Sec. Lt. E. H. Halley, Sec. Lt. E. W. Harriott, Lt. N. D. Lansdown, Lt. G. M. Stephenson, Lt. A. C. Stopher, Sec. Lt. G Travers, Sept. 10th; Sec. Lt. R. S. Griffiths, Sec.

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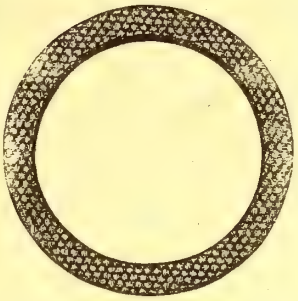

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Lt. R. S. Stainsby, Lt. E. H. Stanes, M.C., Sept. 11th; Lt. L. S. Latham (substituted for notification in "Gazette" of Sept. 26th), Lt. I. H. Lawrence, Sept. 12th; Sec. Lt. P. F. T. Luckham, Sept. 13th; Sec. Lt. J. J. Luckley, Sept. 14th; Lt. H. Richard-De-Leschery, Sec. Lt. L. E. Gunn, Lt. H. C. Leaver, Sec. Lt. G. C. Lugg, Sept. 15th; Sec. Lt. L. R. Lane, Sept. 16th; Sec. Lt. J. C. Rottomley, Lt. W. A. R. Robertson, Sept. 17th; Lt. S. Lindsay, Lt. H. B. Mann, Sept. 18th; Capt. I. O. Griffith, A.F.C., Sept. 19th; Lt. A. J. J. Lamb, Capt. F. S. G. Lewis, Sec. Lt. R. G. Mollard, Sept. 20th; Sec. Lt. G. Hall, Sept. 22nd; Lt. A. H. Forester, Lt. L. Lovatt, Sept. 23rd; Lt. A. D. C. Browne, Lt. R. S. Gilbert, Sec. Lt. J. B. Leach, Sept. 24th; Sec. Lt. R. G. S. Thomson, Sept. 25th; Sec. Lt. J. A. Barber, Sec. Lt. J. R. N. Booth, Lt. (actg. Capt.) A. Boyle, M.C., A.F.C., Lt. A. M. Lewis, A.F.C., Lt. C. C. F. Osborn, Sec. Lt. J. O. Taylor, Sept. 26th; Sec. Lt. G. E. O. Dixon, Lt. A. W. Donald, Lt. C. H. Miller, Sec. Lt. F. T. Parr, Sept. 27th; Sec. Lt. G. B. Emery, Lt. T. H. Forrest, Sec. Lt. N. Gray, Lt. G. F. Shreve, Sept 28th; Sec. Lt. H. A. Zeats, Sept. 29th; Maj. J. E. Dixon-Spain, O.B.E., Sept. 30th; Sec. Lt. W. R. Hatfield, Oct. 2nd; Lt. E. R. Lickfold, Lt. J. Mackereth, Oct. 5th; Lt. M. G. Carmody, Sec. Lt. J. M. Ward, Oct. 7th; Sec. Lt. H. G. E. Davis, Lt. R. C. D. Clifford, Sec. Lt. E. J. Wing, Oct. 8th; Lt. J. A. H. Chaproniere, Sec. Lt. R. B. Clarke, Capt. W. E. Collison, Sec. Lt. E. Exton, Sec. Lt. A. Glen, Lt. H. P. Schoeman, Lt. H. L. Swinburne, Lt. W. Urinowski, Oct. 9th; Lt. E. W. Coveney, Sec. Lt. R. W. C. Waugh, Oct. 10th; Lt. H. M. Fletcher, Oct. 11th; Sec. Lt. A. G. T. Wills, Oct. 20th.

Capt. C. H. Brewer, M.C., relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Oct. 13th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank:—T. G. Drew-Brook (caused by wounds), Sept. 30th; E. H. Stanes, M.C. (Manch. R.), C. B. Whitney (contracted on active service), Oct. 14th; A. B. E. Graham, Oct. 22nd.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—E. L. Milborrow (contracted on active service), Oct. 10th; V. L. Watts (caused by wounds), Oct. 11th.

The surname of Sec. Lt. L. A. Roberton is as now described, and not "Robertson," as stated in "Gazette" of Sept. 26th.

The initials of Sec. Lt. R. C. Adams are as now described, and not "F. C.," as stated in the "Gazette" of Sept. 26th

The surname of Sec. Lt. R. J. Ottaway-Wilson is as now described, and not R. J. O. "Wilson," as stated in the "Gazette" of Feb. 21st.

The notification in the "Gazette" of June 17th concerning Sec. Lt. J. H. Taylor refers to "John Homes Taylor."

The notification in the "Gazette" of March 11th concerning Lt. W. Green (E. Yorks R.) is cancelled.

The notification in the "Gazette" of March 25th concerning Lt. P. H. Clarke is cancelled.

The notification in the "Gazette" of July 25th concerning Sec. Lt. F. C. Logan is cancelled.

The notification in the "Gazette" of Aug. 19th concerning Sec. Lt. H. Toms is cancelled.

The notification in the "Gazette" of Oct. 3rd concerning Sec. Lt. F. W. F. Turner is cancelled.

ADMINISTRATIVE BRANCH.—Group Capt. T. B. Wood, C.M.G., to be Group Capt., from (S.O.), Oct 1st.

Sqdn. Ldr. A. C. E. S. Bowlby relinquishes the grading for pay and allowances as Wing Com. on ceasing to be empld. as Wing Com., Sept. 12th. Sqdn. Ldr. A. ap Ellis to be Sqdn. Ldr., from (S.O.), Oct. 1st.

Flt. Lts. to be Flt. Lts., from (S.O.):—E. D. Cole, F. J. Wise, Aug. 15th; C. C. Treatt, Sept. 1st; H. A. J. Wilson, O.B.E., Sept. 22nd.

Lt. A. B. Monk to be actg. Capt. while empld. as Capt., from Oct. 4th, 1918, to April 30th (substituted for the notification in the "Gazettes" of March 25th and May 23rd).

The following Lts. are graded for purposes of pay and allowances as Capts. while empld. as Capts.:—Lt. S. F. A. Welsh, April 2nd; Lt. J. Woolfenden, May 1st to July 25th.

Lts. to be Lts.:—R. W. Silk, from (O.), May 12th (substituted for the notification in the "Gazette" of June 10th); J. E. Drummond, from (A.), July 25th.

Flying Officers to be Flying Officers:—R. B. Luard, from (A.), Sept. 8th; F. Dance, M.B.E., from (S.O.), Oct. 10th.

The following Flying Officers relinquish the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt.:—W. E. N. Growden, Aug. 20th; C. A. Howe, Aug. 26th.

Flying Officer (actg. Sqdn. Ldr.) G. B. Redgrave relinquishes the actg. rank of Sqdn. Ldr. and the grading for pay and allowances as Flt. Lt., Sept. 12th.

Sec. Lts. to be Lts.:—R. P. Briscoe, Dec. 27th, 1918; R. C. Rogers, June 6th.

The following Sec. Lts. are graded for purposes of pay and allowances as Lts. whilst empld. as Lts.:—J. G. Le Brun (to Sept. 23rd), T. Surr (to July 14th), May 1st.

Pilot Officer G. P. Abbott relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Sept. 3rd.

Lt. C. L. Mundey, M.C. (Lt., R. Fus.), relinquishes his commn. on ceasing to be empld., Sept. 30th

Transferred to unempld. list:—Sec. Lt. P. E. Kearney, July 10th; Lt. T. F. Davis, Aug. 6th; Lt. A. Hancock, Aug. 27th; Sec. Lt. G. A. Lyus, Aug. 30th; Capt. F. J. Gray, O.B.E., Sept. 1st; Sec. Lt. H. P. Bell, Lt. C. A. Umbers, Sept. 3rd; Sec. Lt. A. J. Goring, Sept. 5th; Sec. Lt. P. A. Stallard, Sept. 7th; Sec. Lt. A. F. Stevens, Sept. 8th; Sec. Lt. A. Snell, Lt. J. A. Stedman, Sept. 9th; Sec. Lt. H. T. Green, Sept. 17th; Sec. Lt. H. P. Bolt, Sec. Lt. R. N. H. Cole, Sept. 20th; Capt. L. B. Mills, M.C., Lt. I. Morgan, Sept. 23rd; Lt. D. W. McEwan, Sept. 24th; Sec. Lt. L. T. Hoare, Sept 25th; Sec. Lt. H. V. Hall, Sec. Lt. S. G. Marsh, Sept. 27th; Lt. H. T. Evans, Sept. 29th; Lt. C. H. Cocup, Sept. 30th; Sec. Lt. W. O. Watt, Oct. 9th.

Lt. F. W. Dogherty relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 22nd.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—F. C. Logan, July 10th; W. D. Layton (contracted on active service), Oct. 14th; J. O. Minshall (caused by wounds), Oct. 15th.

The surname of Sec. Lt. J. H. Gray is as now described, and not "Grey" as stated in "Gazette," Sept. 26th.

The notification in "Gazette" of April 29th concerning Lt. A. H. F. Brothers is cancelled.

TECHNICAL BRANCH.—Maj. R. G. L. Markham is graded for purposes of pay and allowances as Lt.-Col. whilst empld. as Lt.-Col., Grade (A), May 1st.

Maj. H. E. Day, D.S.O., M.V.O., to be Maj., Grade (B.), from (S.O.), July 21st. (Substituted for the notification in "Gazette" of Aug. 1st.)

Capt. C. B. Dalison is graded for purposes of pay and allowances as Maj. whilst empld. as Maj. Grade (A.), from (A. and S.), May 1st.

Capt. W. S. Hammond, O.B.E., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A.), May 1st.

Lt. G. S. Hallas, M.C., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A.), June 9th.

Flt. Lts. to be Flt. Lts.:—N. H. Wood, Grade (A.), from (S.O.), Sept. 8th; H. J. Lister, Grade (B.), from (S.O.), Aug. 15th.

Lt. W. T. Hope-Hawkins to be actg. Capt. whilst empld. as Capt., Grade (A.), April 1st, 1918.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capt., Grade (A.):—G. Baillie, C. E. Nightingale, J. H. Mackie, P. H. Paul, A. G. Ridgon, May 1st.

Lt. F. R. Wilkins is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A.), from (Ad.), May 1st.

Lt. H. B. Hawker is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (B.), June 12th.

Flying Officer F. J. Cooke is graded for purposes of pay and allowances as Flt Lt. whilst empld. as Flt Lt., Grade (B.), from (S.O.), Sept. 22nd.

Sec. Lt. (Hon. Capt.) F. C. Marsh is graded for purposes of pay and allowances as Capt. whilst empld as Capt., Grade (B.), May 1st.

Lt. A. J. McNab, M.C., to be Lt., Grade (A.), from Grade (B.), June 25th, 1918.

Flying Officer C. G. Wigglesworth, A.F.C., to be Flying Officer, Grade (A.), from (Airship), Sept. 8th.

Flying Officer S. Empsall relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (A.), Sept. 8th.

Lt. R. J. Copley relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt., Grade (B.), June 11th.

Lt. A. J. McNab, M.C., to be Lt., Grade (B.), from (O.), April 27th, 1918.

Flying Officer T. H. Sills to be Flying Officer, from (S.O.), Sept. 30th.

Sec. Lts. to be Lts:—R. W. Ellis, Sept 28th, 1918 (substituted for notification in "Gazette," March 7th); H. Edwards, May 14th.

Sec. Lts. to be Lts., without the pay and allowances of that rank:—M. Thompson, June 11th, 1918; F. E. P. Langton, Oct. 5th, 1918; A. West, Dec. 4th, 1918 (substituted for notification in "Gazette" of March 7th).

Pilot Officers to be Flying Officers without pay and allowances of that rank:—H. S. Whitley, Aug. 5th; G. A. Slater, Aug. 27th.

The following Sec. Lts. are graded for purposes of pay and allowances as Lt. whilst empld. as Lt., Grade (A.):—W. Dentith (to Sept. 22nd), J. Driscoll, A. A. Gardner, J. G. Wright, May 1st.

Pilot Officer (Hon. Flying Officer) J. C. Dyson to be Pilot Officer, Grade (B.), from (S.O.), Sept. 29th, and to be Hon. Flying Officer.

Sec. Lt. (Hon. Capt.) F. C. Marsh to be Sec. Lt., Grade (B.), from (Ad.), May 1st, and to be Hon. Capt.

Sec. Lt. H. Royston (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Grade (B.), Oct. 21st, 1918 (substituted for notification in "Gazette" of Dec. 20th, 1918, wherein this officer was shown under Admin. Branch).

Transferred to the unempld. list:—Lt. (actg. Capt.) W. T. Hope-Hawkins, Jan. 24th; Sec. Lt. (Hon. Lt.) J. E. Sierra, April 3rd (substituted for notification in "Gazette" of April 25th); Lt. A. West, April 16th (substituted for notification in "Gazette" of June 6th); Lt. D. Cairns, April 23rd; Lt. H. D. P. Jehring, May 27th; Lt. B. A. Gunner, June 11th; Sec. Lt. J. Macpherson, Aug. 28th; Maj. W. J. S. Lockyer, Lt. H. B. Long, Aug. 29th; Capt. G. N. Lindeman, Sept. 4th; Sec. Lt. E. Lancaster, Sept. 5th; Sec. Lt. J. Stevenson, Sept. 6th; Lt. W. Hall, Sept. 7th; Lt. E. M. Leete, Lt. R. Stewart, Capt. H. W. R. Trigg, Sept. 8th; Sec. Lt. H. A. Lyford, Lt. W. A. Lyon, Sec. Lt. E. M. McCormack, Sec. Lt. R. R. Stockwell, Lt. (Hon. Capt.) A. R. Thomson, M.C., Sept. 9th; Sec. Lt. G. H. Mansell, Sec. Lt. F. W. G. Ticehurst, Capt. G. E. Upton, Sept. 10th; Lt. M. P. Lewis, Sept. 12th; Lt. W. L. P. Gould, Sec. Lt. A. G. S. Lyford, Sept. 13th; Lt.-Col. R. H. Brand, O.B.E., Lt. P. Cairns, Sept. 15th; Lt. W. Woodman, Sept. 17th; Lt. L. V. Beckett, Sec. Lt. H. Miller, Sept. 18th, Lt. C. J. Ashdown, Lt. K. I. Goodman, Sept. 19th; Capt. T. Allen, Capt. J. Hammersley-Heenan, Lt. D. K. Leed, Sept. 20th; Sec. Lt. W. Adam, Lt. C. V. Anthony, Sept. 22nd; Lt. S. T. Heath, Maj. D. D. Milne, Sept. 23rd; Lt. C. Murchie, Sept. 25th; Sec. Lt. W. H. Johnson, Sept. 26th; Sec. Lt. (Hon. Capt.) P. J. Burns, Sec. Lt. (Hon. Capt.) E. R. Tongue-Croxall, Sept. 27th; Sec. Lt. (Hon. Lt.) C. A. Assiter, Oct. 1st; Lt.-Col. E. G. O. Beuttler, O.B.E., Oct. 5th; Lt. P. L. Hill, Oct. 7th; Sec. Lt. J. Stewart, Lt. W. H. Stirling, Oct. 8th; Sec. Lt. E. G. Anness, Sec. Lt. (Hon. Lt.) W. V. Clemence, Lt. F. E. Godfrey, Oct. 9th; Sec. Lt. W. C. Francis, Sec. Lt. F. G. A. Terrill, Oct. 10th; Capt. G. G. McHardy, Oct. 12th; Capt. W. G. J. Wardle, M.B.E., Oct. 20th.

Lt. T. J. Stannage relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 1st. (Substituted for notification in the "Gazette" of Sept. 2nd.)

The notification in the "Gazette" of April 29th concerning Lt. W. T. Hope-Hawkins is cancelled.

The notification in the "Gazette of Feb. 14th concerning Lt. W. T. H. Hawkins is cancelled.

The notification in the "Gazette" of Aug. 26th concerning Lt. P. Cairns is cancelled.

The notification in the "Gazette" of Oct 7th concerning Lt. P. Cairns is cancelled.

The notification in the "Gazette" of July 8th concerning Sec. Lt. E. H. Halley is cancelled.

The notification in the "Gazette" of July 25th concerning Sec. Lt. F. C. Logan is cancelled.

The notifications in the "Gazettes" of May 24th, 1918, Oct. 22nd, 1918, and June 27th concerning Lt. A. J. McNab, M.C., are cancelled.

The notification in the "Gazette" of Sept. 12th concerning Sec. Lt. A. G. Ridgon is cancelled.

MEDICAL BRANCH.—Capt. H. Harvey to be actg. Maj. while empld. as Maj., July 28th.

Capt. R. B. Lilly is transferred to unempld. list, Sept. 16th.

DENTAL BRANCH.—The surname of Lt. R. H. Moore is as now described and not "More" as stated in the "Gazette" of Aug. 8th.

MEMORANDA.—Lt. A. C. W. Williams is granted the hon. rank of Capt., Aug. 16th, 1918.

The following Probationary Flight Officers are granted Hon. Commns. as Sec. Lts.:—F. A. Lewis, Nov. 21st, 1918; G. N. S. Lane, April 24th; J. R. F. Cheese, March 8th; J. S. Stauffer, Sept. 28th.

The following relinquish their commns. on ceasing to be empld.:—Capt. A. Warnock (Capt. and Qrmr., Ox. and Bucks. L.I.), Oct. 3rd; Maj. R. Money, O.B.E. (K.O.R., Lancs. R.), Oct. 9th; Lt. A. V. Burbury, M.C. (Lt., Yorks. R.), Oct. 14th; Temp. Hon. Lt. H. Clark, Sept. 16th.

Transferred to unempld. list:—Lt. J. C. Watson, June 13th; Capt. H. J. Lister, from (S.O.), Aug. 20th; Capt. C. H. Beril, from (S.O.), Sept. 16th; Capt. (actg. Lt.-Col.) E. S. Halford, O.B.E., from (S.O.), Sept. 30th; Capt. A. M. Taylor, from (S.O.), Oct. 7th; Col. T. E. St. C. Daniell, C.B.E., M.C., from (S.O.), Oct. 6th.

The notification in the "Gazette" of Sept. 5th concerning Flt. Lt. C. E. Hodgson is cancelled.

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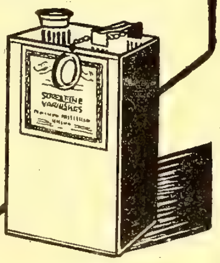

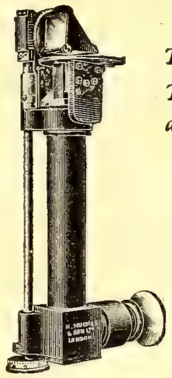

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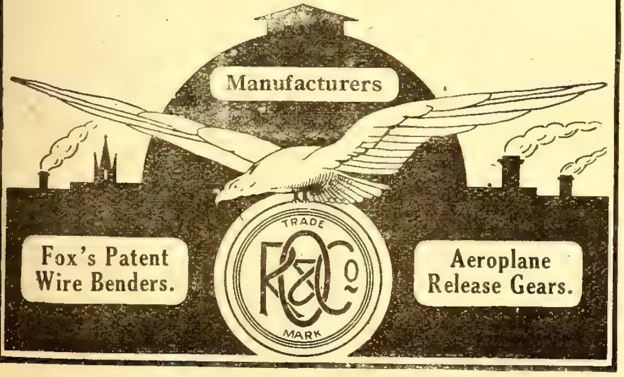

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PERSONAL NOTICES.

NAVAL.

Death.

PORTE.—J. C. Porte, C.M.G., late R.A.F. (Lieut.-Cmdr., R.N., retired, and late Wing Cmdr., R.N.A.S.) died suddenly on Oct. 22nd at his residence, 8, Norfolk Terrace, Brighton. He was the husband of Mynnie Porte and the son of the Rev. Dr. Porte, of the Old Priory, Steeple Morden, Royston.

Engagement.

FANE—BACON.—On Oct. 1st, at St. Andrew's Church, Raveningham, Norfolk, Capt. Gerard Fane, D.S.C., R.A.F., was married to Constance Rhoda Elizabeth, daughter of Mr. and Mrs. Nicholas Bacon, of Raveningham Hall, by the Right Rev. the Bishop of Thetford, assisted by the Rev. T. Andrews, Vicar of the Parish.

Births.

ROBERTSON.—On Oct 23rd, at 6, Nelson Road, Southsea, to the wife of Wing-Comdr. E. D. Maxwell Robertson, R.A.F. (H.M.S. " New Zealand ")—a daughter.

ST. JOHN MURPHY.—On Oct. 25th, at 4, Cambridge Road, Bournemouth, Winifrid (née Blackstone), wife of Surgeon-Commander J. St. John Murphy, R.N. (attd. R.A.F.) —a daughter.

VEREY.—On Oct. 12th, at Hall Place, Weybridge, Surrey, the wife of Major D. R. Verey, D.S.C., late R.A.F., of a daughter.

MILITARY.

Deaths.

BRISCO-OWEN.—Clarence Morland Brisco-Owen, M.C. (and Bar), K.I.H., late Captain R.F.C., died on Sept. 12th at Rawul Pindi, India, of cholera. He was the only son of the late M. Brisco-Owen, Haulvre, Beaumaris.

HOLTOM.—Sec. Lieut. Jack Nicholson Holtom, R.F.C., who was killed in action on Oct. 22nd, 1916, was the youngest son of Mrs. Amy Holtom, 64, Sutherland Avenue, Maida Vale. He was 23 years of age.

MASON.—Pte. Leonard Alfred Mason, South Staffs, formerly of R.F.C., who was officially reported missing in France on Oct. 12th, 1917, is now officially reported presumed killed in action on that date. He was the husband of M. Winifred Mason, of Putney, S.W.15.

PIXLEY.—Captain Reginald George Hewett Pixley, M.C., 7th London Brigade, R.A.F., attached R.F.C., reported missing on June 4th, 1917, is now privately ascertained to have been killed in action on that date. He was the younger son of Major and Mrs. Stewart A. Pixley, of Woking, and was 24 years of age.

Marriages.

COLLINS—RUSSELL.—On Oct. 20th, at St. James', Paddington, Capt. Athol D. Collins, Worcestershire Regiment, and R.A.F., eldest surviving son of D. George Collins, C.C., Shirley Park, Croydon, was married to Agnes Annie Russell, only daughter of Mrs. Russell, Downham, Norfolk, by the Rev. C. Scott.

FORBES—DRAKE.—On Oct. 15th, at All Souls, Langham Place, Maj. Leslie F. Forbes, M.C., R.A.F., second son of Mr. and Mrs. J. Webster Forbes, Birchfield, Birmingham, was married to Nora Phyllis, daughter of Mr. and Mrs. W. E. Drake, Goodwick, Pem.

KENNEDY—MOSS.—On Oct. 16th, at S. John's Church, Windermere, Capt. Norman McLeod (late A.O.D. and R.A.F.), eldeset surviving son of Mr. and Mrs. J. Y. Kennedy, of 16, Freeland Road, Ealing, was married to Winifred Hardwick, youngest daughter of the Rev. and Mrs. John Miles Moss, of Helm, Windermere, and Winthwaite, Sidmouth, by the Rev. P. B. Mercier, M.A., Vicar of Seascale, assisted by the Rev. T. B. A. Saunders, M.A., Vicar of the parish.

WINCH—MAIS.—On Sept. 18th, at St. Stephen's Church, Ealing, Lieut. Hubert Edward Winch, R.F.A., R.A.F., was married to Dorothy Beatrice Mais, of Jamaica.

Births.

BAYLY.—On Oct. 14th, at 40, Granada Road, Southsea, to the wife of Major L. J. Bayly, R.G.A., R.A.F.—a daughter.

BEAUFORT.—On Oct. 8th, at Steephill, Jersey, the wife of Major Victor Beaufort, O.B.E., M.C., Devonshire Regiment and R.A.F., of a daughter.

JACKSON.—On Oct. 16th, at Winchelsea, to Kathleen (*née* Wansey), the wife of Major A. H. Jackson, the Sherwood Foresters, and R.A.F.—a son.

PILLERS.—On Oct. 26th, at Leamington Spa, the wife of Major R. Kingsley Pillers (Northants Regt., attd. R.A.F.), of a daughter.

AIR FORCE.

Deaths.

MOLES. — Percival Fitz-Patrick Moles, late R.A.F., the only child of George and Eily Moles, of Shrubbery House, Lydd, Kent, died on Oct. 9th, after a short illness. He was 19 years of age.

RALLI.—Lieut. Eustace John Ralli, R.A.F., died on Oct. 13th at the R.A.F. Auxiliary Hospital, Swansea, as the result of injuries received while night-flying on May 8th, 1918. Mr. Ralli was flying that night on the air defence of London. He was the only son of Capt. and Mrs. Stephen Pandeli Ralli, of 43, Great Cumberland Place, W., and was 21 years of age.

Engagements.

ADES—McINTOSH.—The engagement is announced between Lieut. Esmond Selby Ades, R.A.F., second son of Mr. and Mrs. Ades, of South End House, Croydon, and Marjory Ailsa ("Bobbie"), only daughter of Mr. and Mrs. Walter McIntosh, The Poplars, Ryde Vale Road, Balham.

HODSOLL—TOMLIN.—The marriage arranged between Flight Lieut. E. J. Hodsoll, R.A.F., and Miss Joyce Tomlin, of 67, Elm Park Gardens, will take place on Saturday, Nov. 22nd, at St. Peter's, Cranley Gardens, at 2 p.m.

WAKEFIELD—LEWIS.—A marriage has been arranged, and will take place on Nov. 19th, at St. George's, Hanover Square, between Flt. Lieut. W. W. Wakefield, R.A.F., eldest son of Roger William Wakefield, M.D., and Mrs. Wakefield, of Winder, Cark-in-Cartmel, and Rowena Doris, daughter of Llewelyn Lewis, M.D., and Mrs. Lewis, Maesyrhaf, Neath.

WHITELOCK — BRYNING. — The engagement is announced between Sqdn. Leader A. T. Whitelock, R.A.F., son of Mr. T. R. Whitelock, Barnsley, Yorkshire, and Frances Mary, daughter of the late Edward Bryning, J.P., Kirkham, Lancashire.

Marriage.

BARRACLOUGH—WILSON.—On October 22nd, at St. Clement's Church, York, John C. Barraclough, son of Dr. and Mrs. Barraclough, of Lowestoft, was married to Kathleen M. R. Wilson, daughter of the late the Rev. H. A. Wilson (Vicar of Rufforth) and Mrs. Wilson, of Scarcroft Hill, York.

GLOVER—BEVIS.—On Saturday, Oct. 17th, at St. Thomas's Church, Portsmouth, Lieut. William Henry Glover, R.A.F., of Fareham, was married to Elsie Jennie Bevis, daughter of Mr. and Mrs. A. W. Bevis, of Portsmouth, by the Rev. L. David, M.A.

Births.

CABLE.—On October 1st, at a nursing home in Teignmouth, South Devon, the wife of Lieut. L. Cable, R.A.F., of a son.

HOLLAND.—On Sept. 29th, at Rosario de Santa Fé, Argentine, to Cicely, wife of Capt. S. H. Holland, late R.A.F.—a daughter.

KEYMER.—On October 6th, at the Old House, Airesford, Hants, the wife of the Rev. B. W. Keymer (R.A.F.), of a daughter (Diana).

SCOREY.—On Oct. 13th, in London, to the wife of Serjt.-Maj. W. J. Scorey, R.A.F., M.S., of 25, Hugh Street, S.W.1—a son.

WINDELER.—On Tuesday, Oct 14th, at 21, Eldon Road, Kensington, W.8, to Linda Harley, wife of B. C. Windeler (late Major, A.F.C., R.A.F.)—a son.

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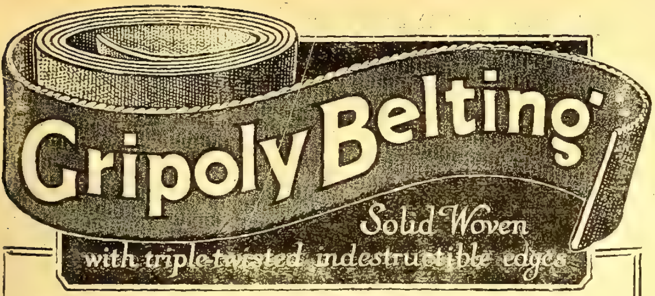
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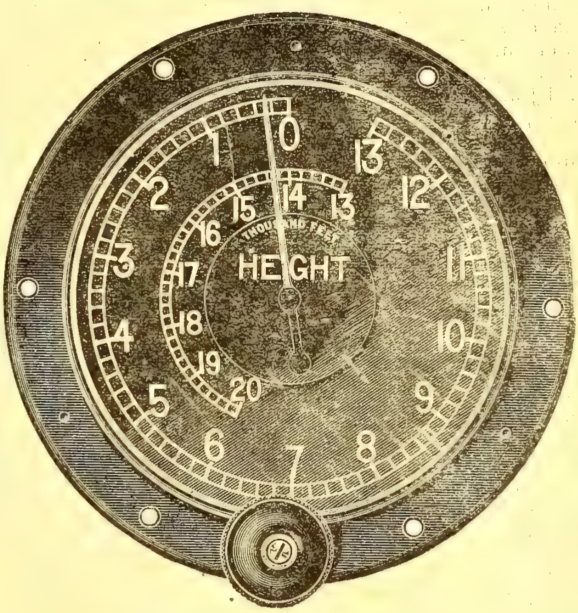

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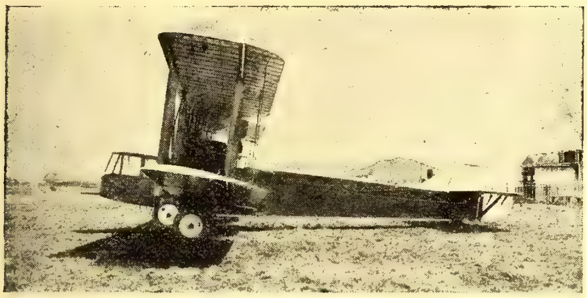

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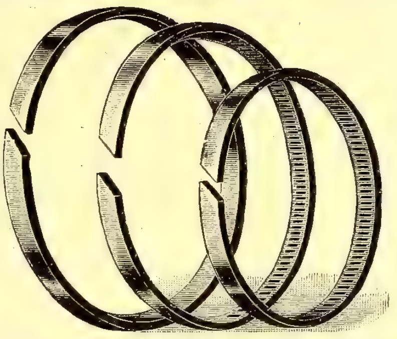

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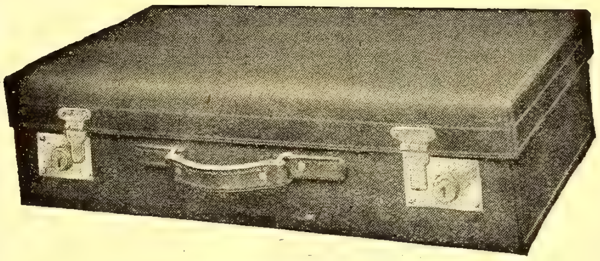

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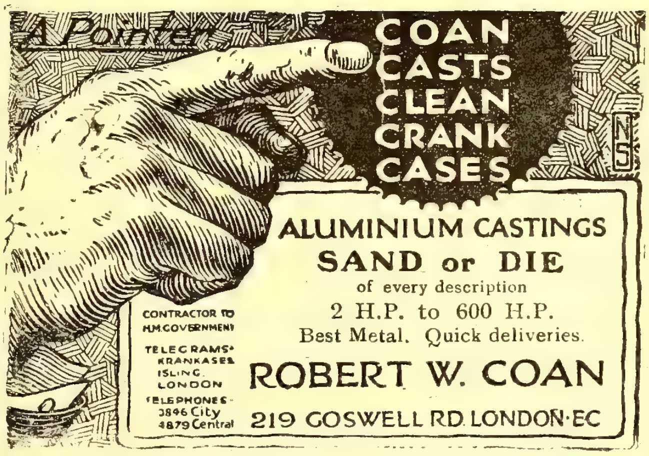

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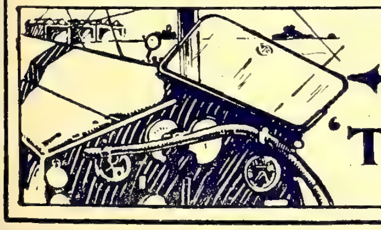

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ON OUR SUPERFLUOUS NAVY.

It would appear that their Lordships of the Admiralty are very seriously perturbed about the future of His Majesty's Navy because of certain recent developments in the use of aircraft. One calls them recent developments rather because they have only recently penetrated the Navy's intelligence than because they are in fact recent so far as aircraft themselves are concerned. Rumour has it, in fact, that the Navy is gravely considering whether it shall take over the whole of the seafaring portion of the R.A.F., or whether it shall persist in its old obtuse ways until it is itself taken over by the R.A.F. Which is to say that the Navy's intelligence is at last grasping the fact that the Navy as at present constituted is an expensive superfluity.

One has dared to hint in this paper at such a state of affairs at various times during the past few years, but it has taken until the last few weeks for the idea to have any effect on our warriors of the sea, and the story of how they have been forced to think is worth telling. Albeit the story is probably very inaccurate in detail, it is believed to be reasonably true in its general outline, and so it deserves to be told, if only as a yarn.

The Cause of Conversion.

The story goes that a certain strong detachment of our Fleet was lying in harbour near a certain R.A.F. Station which happened to possess a few aeroplanes adapted to the carrying and dropping of torpedoes. The R.A.F. people, ever anxious to amuse the Navy, proposed to the Admiral commanding the Fleet that they should make an attack on his ships with dummy torpedoes on a certain morning, and the Admiral, with that careless *bonhommie* so characteristic of the British sailor, consented to be their target.

So, on the morning agreed, the merry *matelôts* stood to their guns, prepared to abolish—in theory—these funny flying people who thought that they could dispute with the British Navy the Command of the Sea. And, as they swept the horizon from which the torpedo-droppers must arrive, there appeared high in the heavens three or four harmless little aeroplanes, far too high to drop torpedoes or to make good aim with bombs.

Then, a mile or two to windward of the Fleet, there were seen a number of small splashes in the water. In a few seconds there arose from these splashes a thick and mephitic smoke which drifted down wind onto the Fleet and enveloped it in a dense fog. And, as the fog began to clear away, there came thud after thud against the anchored ships, and with a roar of engines half a squadron of aeroplanes swept over their mastheads and away up into the sky out of range before the astonished *matelôts* had time to train a gun on them.

The aeroplanes had scored seven hits out of nine shots, and theoretically had sunk or permanently disabled seven ships without losing an aeroplane. And as a result, to quote a ribald aviator, the Big Brass Hats at the Admiralty are now held in suspension by a perfectly vertical blast.

The Dawn of Intelligence.

Whether one regards the aeroplanes concerned in this affair as being analogous to the Cross in the Sky which converted Constantine the Great, or merely as Balaam's ass arguing with its master, the fact remains that the Navy has been given furiously to think, and from what one hears there seems to be something resembling the dawn of intelligence in the King's Senior Service.

The coming of Earl Beatty to the Admiralty has also tended to brighten the minds of the officials in that august establishment. Admiral Beatty being an Irishman—and a County Wexford man at that, Wexford priding itself on being "the model county"—it is natural that he should have a quicker wit and a more practical mind than the majority of Senior Naval Officers.

There is a certain type of mind which is capable of seeing far ahead in a nebulous way, but is quite incapable of appreciating at its full value and of using the means immediately to hand. We have had lamentable examples of the working of this type of mind in the recent self-exposures of Lord Fisher and Sir Percy Scott. Each of them has bleated loudly about his faith in flying. The latter has even delivered himself of the startling prophecy that aircraft will command the air and the sea beneath. But, barring Lord Fisher's encouragement of the "Blimp" type of airship—as submitted to him by Mr. Holt Thomas and Mr. E. T. Willows conjointly—one cannot recall that either of these eminent writers has ever done anything to aid the immediate development of aircraft.

Admiral Beatty, on the other hand, from the moment when he assumed a position of importance in the Grand Fleet, set to work to encourage the aircraft people. And when he was appointed to the command of the whole Fleet, on the opportune removal of Admiral Jellicoe, the position of the R.A.F. was vastly improved, in spite of the great drawback of being an alien Service working in the ships, instead of being part and parcel of the Navy as was the R.N.A.S.

It was under Admiral Beatty that deck-flying and torpedo-dropping were given a fair chance. It was under his régime that kite-balloons with the Fleet increased and multiplied like rabbits. It was he who realised, before all other senior officers, that the Fleet of the future must depend for its safety entirely on its aircraft.

A Logical Sequence.

It must follow as a logical sequence in the practical Irish mind of such a man as Lord Beatty that, if the existence of the Fleet is to depend on its aircraft, then the aircraft and the personnel which operate them must be part and parcel of the Navy.

To locate a couple of deck-flying aeroplanes, with pilots, observers, technical officers, N.C.Os., and men of the R.A.F., on a cruiser or battleship is about as sensible as putting the personnel of a "heavy" battery of the Royal Garrison Artillery on board a ship to work its guns. One does not doubt the probability that the

R.G.A. would improve the ship's shooting, but their existence on board would not be over-pleasant, and their dual administration by the Admiralty and War Office would certainly upset the routine of the ship.

The Question of the Day.

No man can serve two masters, and aircraft personnel on board ship cannot serve the Admiralty and the Air Ministry. Either the ship and the aircraft which it carries must belong to the Admiralty, or the aircraft and the ship which they use as a home and as a stores depot must belong to the Air Ministry. Either the aircraft must go where and when the N.O. commanding the ship desires, or the ship must go where and when the O.C., R.A.F., desires. And the whole outfit must belong to the Service which controls the movements of the whole. The question to be decided is : Which Service is to control the other?

It is demonstrable that, though the Navy cannot exist without aircraft, a seagoing Air Service can exist without the Navy as at present constituted. Therefore on the face of it there seems to be a strong argument in favour of putting the Navy under the control of the Air Ministry. But, the Navy being the pet of the British public and the Air Ministry being, deservedly, its *bête noir,* it is obvious that such a thing could not be. Let us therefore examine the question in some detail, and in the light of practical examples.

If There Had Been!

When Admiral Sir Doveton Sturdee's very superior ships sank the squadron of the gallant Admiral von Spee off the Falkland Islands they did so because the British guns began hitting at 17,000 yards or so, at which range the German guns were incapable of reaching the British ships, in spite of their excellent shooting. But suppose that instead of consisting of inferior fighting ships von Spee's squadron had been composed of seaplane-carriers, armed with torpedo-droppers of the type which recently theoretically abolished a British squadron, as related at the beginning of these notes. Von Spee's torpedo-planes could then have attacked the British ships at any distance they pleased, and must inevitably have sunk them.

There is an added advantage about the torpedo-dropper in that it can attack successfully when visibility is so bad that superiority of range in guns is of no advantage. Therefore, whether at long or short range, the torpedo-dropping aeroplane flown from the deck of a ship can beat the big gun.

The Dover Patrol.

Let us take another example. It is an axiom that a gun in a fort can always beat a gun afloat. This was proved beyond question at the Dardanelles, and again by the abject futility of the operations of Admiral Bacon's much-advertised "Dover Patrol" against the Belgian Coast. The best his ships could do was to steam up to the coast in the morning mist, fire blindly at the coast, and then run away before the Tirpitz Battery and the other big German shore guns got onto them.

Anybody who has skirted the Belgian coast between Dunkerque and Flushing can see that practically no damage has been done in Belgium, except by the Army's operations at Nieuport. The rest of the coast hardly seems to have known that there was a war on.

But if, instead of all that amazing waste of money on monitors and other ships with big guns, the Dover Patrol had been adequately equipped with bombing and torpedo-dropping aeroplanes, the German positions along the Belgian coast could have been bombed till they became untenable, every German warship which tried to use the harbours at Ostende and Zeebrugge could have been torpedoed where she lay, and every submarine which tried to lie up in the docks and canals could have been destroyed with depth-charges.

Guns versus Aeroplanes.

Thus it must be evident, even to a naval intelligence, that the long-range naval gun is useless in future either for fleet actions or for use against positions on land.

Parenthetically, one may observe that the Army discovered in the first day or two of the attack on Gallipoli that the Navy's shooting was useless against the Turks on the peninsula. Further, though we have heard a good deal about the work of the Navy in support of the "loyal" Russians against the Bolsheviks, both on the Arctic fronts and on the Baltic coast, it would seem that the few seaplanes carried by the ships have done much more good than have all the naval guns.

A big gun costs very much more than an aeroplane. In fact, a single shell for the biggest guns costs approximately as much as a single-seater scout. When a shell has burst it may or may not have done damage, but an aeroplane, when it has dropped its bombs or its torpedo, remains a weapon of offence, in that, having demoralised its foes and having done damage, considerable or inconsiderable, it can return to the scene in a few seconds and carry on the good work with its machine-guns.

If it be admitted that the day of the big naval gun is past, it may be claimed that the day of the heavily armoured fighting ship is also done. One believes that naval "experts" deny that it is possible to armour against torpedo attacks, and if heavy armour is useless against torpedoes, then the battleship may as well be abolished.

Thus we come to a Navy composed entirely of ships of the type of "Furious," lightly armoured, very fast, and equipped with quantities of aeroplanes, bombs, and torpedoes. Their only guns would be those required for anti-aircraft and anti-submarine work.

Political Pull.

From the abolition of surface ships of present type it would naturally follow that the Navies of the World would go to the other extreme and produce submarine battleships. Already, it is said, our big submarines carry 12-inch guns, and there is nothing except the cost to prevent the building of a submarine as big as the biggest battleship and carrying 17-inch guns, if people are still so foolish as to believe in big guns.

If the armament firms whose directors disbelieve in aircraft and still believe in big guns decide to use their political pull in favour of their gun-foundries instead of the aircraft departments which some of them have stupidly shut down since hostilities ceased, no doubt we shall have these submarine battleships foisted upon us. Whether we do or not would seem to depend largely on whether the aircraft firms, aided by the aircraft departments of the armament firms, have more political pull than the gun-foundry interests.

In any case, the aeroplane armed with bombs and depth-charges can keep a fleet of submarine warships under the water just as easily as it can drive a fleet of surface ships off the face of the water. No force of submarines will ever dare to show their periscopes near any coast or any fleet which is adequately supplied with aircraft.

The New Submarine Aircraft.

But there is an opportunity for a new type of submarine and a new type of aeroplane which will do much to complicate the existence of the big seaplane-carriers of the future.

Very early in this war, when the subject of bombing Germany was being much discussed, and a peculiarly futile R.N.A.S. expedition was about to be sent to

Eastern France to bomb the Rhine towns, the ingenious Mr. Pemberton Billing propounded a very much better scheme. His idea was to build a special type of flying-boat with the engine in the hull, and the wing-structure to fold down and inwards, so that the whole machine could be packed into a coffin-like box very little bigger than the hull of the boat. This machine was to be carried in a water-tight compartment built onto the hull of a submarine.

A flotilla of submarines thus equipped were to go secretly into the Baltic, meet off the German coast, and release their flying-boats, armed with bombs, for a raid on Berlin, which is only a matter of 100 miles from the coast in a straight line. A similar flotilla was to dive into the Helgoland Bight and raid Hamburg—it will be remembered that our submarines habitually dived into the Ems and Jade.

A SIMPLE PROPOSITION.

It was a delightfully simple idea, like all Mr. Pemberton Billing's schemes. He actually had a hull built for such a flying-boat, and designs were got out for the folding-wing structure, which opened on a system something like that of a "lazy-tongs" or a "one-man hood" on a motor-car.

According to the plan, the machine was packed in its compartment all ready for flying, loaded with petrol and bombs. The submarine emerged. The lid was taken off the box. The aviator took his seat and wound a handle which pulled up all the wing-structure into position. The submarine then submerged, leaving him floating. He then started up his engine and flew off.

That was how the scheme worked in theory, and one can see no reason why it should not work in practice, if tackled by a clever designer. Unfortunately, it was not adopted. Perhaps the technical "experts" prevented the scheme from reaching the higher authorities. Perhaps the high authorities—as so often happens in the Navy—had not the intelligence to understand the scheme.

Whether it be adopted in future or not, there is in it the basis of a very dangerous weapon for the next war. Therefore one commends it to the Naval Authorities of to-day. Whoever holds the Command of the Air, there will always be difficulty in preventing a submarine aircraft-carrier from sneaking up in the morning mist, releasing its aeroplane with bombs or torpedoes, and getting away home before it is caught by the defending aircraft.

THE COMMAND OF THE AIR.

It is hoped that one has made it clear that whoever holds the Command of the Air will also hold the Command of the Sea. Also, it is fairly obvious that whoever holds the Command of the Sea controls the existence of the British Empire. And, lest the existence of the British Empire should seem but a trifle to our good democrats and trade unionists of to-day, one would point out that whoever holds Command of the Sea also controls the food supplies of the population, including the politicians, the trade unionists, and the Bolshevists. Therefore this is a matter which concerns intimately even our journalists, despite the superior attractions of divorce cases and the latest extravagances of jazz.

Some years ago Major-General Sir David Henderson, then something of a power in connection with aviation, was pleased to sneer at those who believed in the Command of the Air, and declared that such a command could not exist. Not long afterwards Major-General

A view of the Admiralty Arch, Trafalgar Square, the National Gallery and the surrounding district photographed from an Airco biplane. The Admiralty itself is disappearing in the right-hand bottom corner.

Hugh Trenchard, and later Major-General John Salmond, proved that such a Command could and did exist. Thus the Army was taught to recognise the possibility and the value of the Command of the Air.

Unfortunately the Navy never had such a lesson during the war. And the one of our few existing statesmen who believes firmly in Air Power, namely Mr. Churchill, will have nothing to do with the future of the Navy. That is unless he can carry through his great and thoroughly sound scheme for a War Ministry which will control the Admiralty, War Office, and Air Ministry as one team. It remains to be seen, therefore, whether Lord Beatty and his immediate assistants will be able to secure control of the Naval side of aeronautics, or whether the Naval section of the Air Ministry will have to expand gradually till at last it is bigger and stronger than the Navy proper.

The Financial Aspect.

From most points of view it would be better for the Navy to take over all Naval aeronautics, and especially from the financial point of view. If the Air Ministry retains control it will mean that the paltry sum of money voted for the R.A.F. will have to pay and equip the Naval units and will have to pay for all experiments in Naval aircraft. And that means that there will be no real progress in Naval aeronautics for years to come.

If, on the other hand, the Navy takes over what is by all the laws of common sense its proper job, it will pay for everything out of the Navy Vote, as Mr. Churchill did when he built up the R.N.A.S., saved the Aircraft Industry alive, and so ultimately provided the aircraft matériel which saved the British Army in France. And, as one has already remarked, the Navy is the particular pet of the British Public, so there can never be any difficulty about getting enough money out of the Treasury for Naval aeronautics, though there is the greatest difficulty in getting it for the R.A.F.

On the other hand, there is certainly the danger that, if the Navy takes over Naval aeronautics, the Treasury may insist on making such a cut in the R.A.F. Vote (as representing the reduction in cost by transferring the Naval side to the Navy) that it may become impossible to carry on the Air Ministry at all. Whether that would be any loss is a matter which may be debated, but it is certain that it would be better to scrap the Air Ministry than to starve the development of Naval aeronautics so as to provide funds to maintain the Air Ministry. It is also certain that the development of Naval aeronautics has been starved during the past two or three years, ever since the Air Board and the Air Ministry in succession prevented healthy competition between the Supply Departments of the two Services.

Therefore, as the future safety of this country and its food supplies depend on the Command of the Air over the sea even more than on its Command of the Air over land, it seems to be more important that such money as can be secured for aeronautics should be spent on developing the Naval rather than the Military side. And one says this without in the least ignoring the vital importance of developing the aircraft needed by the Army, whose aeroplanes towards the end of the war were painfully behind the times.

Conflicting Interests.

Money must be spent on building and equipping a great Naval Air Fleet. If the Navy is charged with that task we may get the Fleet we need, for the Navy can then with a clear conscience spend money on aircraft and aircraft-carrying ships alike. But if the job is left to the Air Ministry we shall get very little in the way of Naval aircraft: at any rate compared with what we need.

If by any chance the Air Ministry chose to spend the bulk of its available money on Naval Aircraft, it would be trying the Admiralty rather high to expect it to spend millions on aircraft-carrying ships which would, when built, be manned by and operated in the interests of another and junior Service. Can anyone see Their Lordships scrapping a programme of battle-cruisers and super-Dreadnoughts so as to provide a dozen ships for R.A.F. ship-planes?

It hardly seems reasonable that they should do so. They would in fact be much more likely to continue to produce elaborated versions of the warships of to-day. Which is only another reason why the ships, and the aircraft which they carry, and the personnel which runs them both, should all belong to the same Service.

The Lessons of War.

As one suggested at the beginning of these notes, either the Navy must take over and develop Naval aeronautics, or it must degenerate into an expensive superfluity. When one considers what the Navy proper, as distinct from its piratical branches the destroyers and submarines, did in the Great War (so-called) one begins to think that it has been an expensive superfluity for many years.

At best our big ships have been only a bluff which we put over the Germans. All the real work of protecting our food supplies was done by destroyers, armed passenger-boats, tramps, and trawlers, and the great majority of the personnel of these were R.N.R. and R.N.V.R. What those who wore the R.N. uniform had to do with winning the war was very little, and some of them did a great deal towards losing it.

If we had had no Battle Fleet and no Cruiser Fleet at all, but if we had had a big fleet of torpedo-dropping aeroplanes (costing in all about as much as two cruisers) we could have kept the German Fleet as successfully bottled up as we did by our bluff with our Grand Fleet. More than that, we could have "dug the rats out of their holes," as Mr. Churchill proposed to do before he was intrigued out of office. And it would have been our torpedo-planes which would have done it, as Mr. Churchill intended.

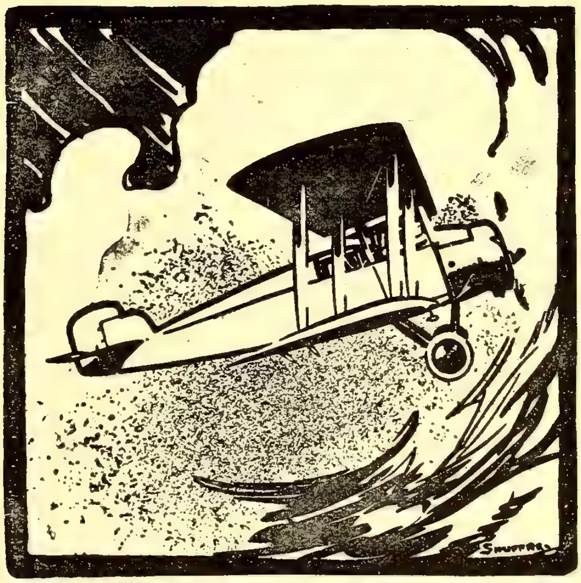
It was not the fault of the R.N. officers that so few of them ever saw any real war. And it will not be their fault if in the next war they, in turn, are bottled up in a superfluous fleet. They were all anxious enough to go to war, but the stupidity of our gilt-edged book-writing admirals prevented them.

The R.A.F. itself came into being chiefly through the machinations of Naval officers, and not through any of the R.F.C. people, all of whom were proud to belong to the finest Service in the World. The R.N.A.S. contained two classes of Naval officers, firstly those who were too brainy for the Navy and were impatient of the Navy's ways as dictated by stick-and-string admirals, and secondly those who were too stupid for the Navy and whose only hope of success in life was to go somewhere else for a job. Both classes wished to get out of the Navy, and so, as extremes meet, they combined in pulling strings at home till the R.A.F. was formed, merely because the soldiers were to busy making war to do anything drastic to stop them. Thus the R.N.A.S. was destroyed.

Now the Navy, by means of Naval aeronautics, has the opportunity of becoming a live and useful Service. If it loses this opportunity it will remain a superfluous and expensive Service till, under the pressure of the World's progress, by way of war as usual, it is taken over by the Royal Air Force. One commends its fate to its consideration.—C. G. G.

CIVIL FLYING

WITH



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NAVAL & MILITARY AERONAUTICS

[The " Official Gazette " Notices will be found on p. 1623.]

GREAT BRITAIN.

COURT CIRCULAR.

Buckingham Palace, Oct. 31st.

The Right Hon. Winston Spencer-Churchill, M.P. (Secretary of State for War and Air), had an audience of the King this morning. . . .

The Prince Albert, attended by Major Louis Greig, received His Imperial Majesty the Shah of Persia on his arrival at Dover on behalf of the King. . . .

Naval and Military Guards of Honour were mounted on the Pier where the Shah was also received by the Senior Naval Officer, Dover, the General Officer Commanding Eastern Command, and the Air Officer Commanding Southern Area. . . .

The King met His Imperial Majesty on arrival at Victoria Railway Station.

There were also present at the station representatives of the Royal Navy, the Army, and the Royal Air Force. . . .

In the evening the King and Queen gave a Banquet in honour of the Shah of Persia, at which the Prince Albert was present, and the following had the honour of being invited :—The Right Hon. Winston Spencer-Churchill, M.P. (Secretary of State for War and Air), and Mrs. Spencer-Churchill, Air Marshal Sir Hugh Trenchard, Bt. (Chief of the Air Staff).

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made :—

Oct. 30th.—Lieut.-Comdr.—R. G. Duke, to "Argus," Oct. 19th.

Oct. 31st.—Engr. Lt.-Comdr.—G. Morgan, to " Pegasus," Oct. 30th.

* * *

Operations in Russia.

It is reported that on Oct. 26th a British seaplane was shot down off Kronstadt and captured by the Bolshevists. A C.M.B. which was sent out to help the crew arrived too late.

Demobilised.

H.M. Seaplane-carrier "Empress" (Comdr. C. V. Robinson, R.N.) has returned to England from the Eastern Mediterranean and will be paid off at Chatham. She will then be refitted for commercial use. "Empress" was one of the three cross-Channel steamers which were requisitioned by the Admiralty in early 1914 and fitted out as seaplane-carriers. With her sister-ships "Engadine" and "Riviera," "Empress" took part in the air raid on Cuxhavn and Wilhelmshavn on Christmas Day, 1914, but the most part of her war service has been done in the Eastern Mediterranean.

No. 8 Squadron Reunion.

Number 8 Naval (208 R.A.F.) Squadron's Reunion Dinner on November 1st was a great success. Something in the region of 200 officers and men were present and the number of men who turned up provided the strongest possible evidence of the esteem in which the three successive C.O's—Squadron Commander Bromet, Major Draper, and Major Smart—were held by those under them. All three C.O's were present, with Squadron-Leader Bromet in the chair.

In addressing those present, the Chairman made the interesting proposal that the Squadron should form a kind of little Co-operative Society on its own account, so that those who were doing well in the World might lend a hand to help comrades who were down on their luck. The proposal was received with enthusiasm, and as soon as the scheme has been properly developed one hopes to refer to it more fully. In the meantime those who are interested are invited to communicate with Mr. F. Hammond (late of the Transport Section, No. 8 Squadron), at No. 10, Ashbourne Grove, East Dulwich, S.E.

AIR FORCE.

The Freedom of the City.

On Oct. 28th Capt. H.R.H. the Prince Albert, K.G., R.A.F., received the Freedom of the City of London.

A Royal Visit.

On Nov. 3rd H.M. the Shah of Persia, accompanied by Capt. H.R.H. the Prince Albert, K.G., R.A.F., visited the Royal Aircraft Establishment at Farnborough.

R.A.F. Officers' Board.

The Air Ministry announced on Oct. 31st that a Selection Board has been formed in order to advise the Air Council as to the award of promotions to post-war R.A.F. officers, and to decide the procedure to be followed in future for the periodical selection of officers for promotion. The following are the members of the first Board :—

Air Marshal Sir H. M. Trenchard, Bart., K.C.B., D.S.O.
Rear Admiral C. F. Lambert.
Air Vice-Marshal Sir J. M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O.
Air Vice-Marshal A. V. Vyvyan, C.B., D.S.O.
Secretary—Squadron Leader H. L. Jackson.

The Flying Services Fund.

The following letter has been written by H.R.H. Prince Albert, K.G. :—

I am appealing for further subscriptions to the Flying Services Fund, which is administered by the Royal Aero Club.

This Fund was established by the Club in 1914 for the benefit of officers and men of the R.N.A.S. and R.F.C. (now the R.A.F.) who were incapacitated on active service, and for the widows and dependents of those who were killed.

The expenses of administration are borne by the Royal Aero Club, and all subscriptions are devoted entirely to those requiring relief.

The subscriptions received amount to £15,000 and the sums which have been expended to date in grants, allowances and the education of children amount to £6,000. The monthly liability for grants, allowance, etc., is about £400, and the education of over 300 children of dependents calls for an increasing expenditure commensurate with their ages. The Committee are most anxious to ensure a proper education for the children of all dependents, and it is mainly for this purpose that further subscriptions are required.

It is estimated that the necessities of the Fund will require it to be administered for at least ten years, and in view of the very real assistance we have been enabled to give to so many deserving and distressing cases, I appeal to all to subscribe liberally to this Fund.

Subscriptions should be forwarded to Lord Kinnaird, K.T., Hon. Treasurer, Flying Services Fund, Barclays Bank, Ltd., 4, Pall Mall East, London, S.W.1, or to me at the Royal Aero Club, 3, Clifford Street, London, W.1.

(Signed) Albert, Chairman.

The Royal Aero Club, 3, Clifford Street,
London, W.1. Oct. 30th, 1919.

At St. Raphael.

On Oct. 28th Capt. Llewellyn, R.A.F., left St. Raphael for Taranto.

It was reported from St. Raphael on the same date that Lieuts. Combes and Crichton, R.A.F., who had left ten days previously for Taranto, were missing. This statement another paper contradicted, but nothing official has been announced.

From St. Raphael comes the news that Major Maclaren, R.A.F., who left there on Oct. 24th, has arrived in Egypt, his destination, and also that Lieut. Alfred Sinclair, R.A.F., of the Royal Air Force Flying School has left in a seaplane for Egypt via Pisa.

H.M. Airships.

It is now understood that H.M.A. R.32, R.33, and R.34 are expected at the Howden Air Station, Yorks, in the course of a few days.

R.A.F. Rugby.

On Saturday Nov. 1st, the R.A.F. Rugby football team played the Old Merchant Taylors at the Old Deer Park, Richmond. The result was : O.M.T., 1 goal 3 tries—14 points; R.A.F., 1 goal 1 try—8 points.

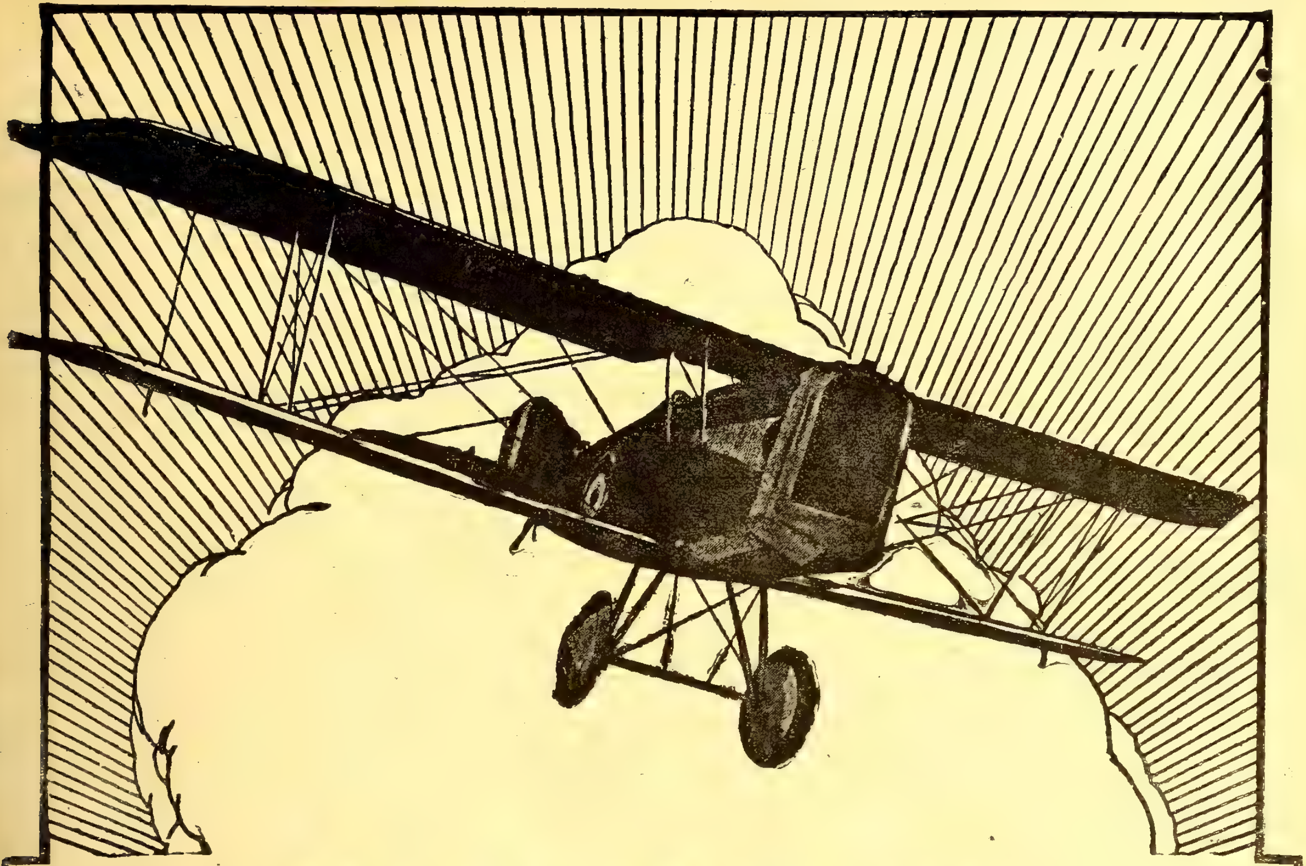
The game was a very close, hardly contested one, in which combination proved the deciding factor. The Air Force were not together at all and were very scrappy. The forwards played a good game in the open, but were not together in the tight scrum and did not control the ball in the loose scrums. The ball was very slow in coming away from the R.A.F. scrum, thus hardly giving the three-quarters a chance. The O.M.T. played a good hard game and thoroughly deserved their victory.

The R.A.F. team was : Flg. Officer Damant, full-back; Flg Officer Smith, Flt. Lt. Thomas, D.F.C., Sqdn. Leader Neale, M.C., Sqdn. Ldr. Evill, D.S.C., three-quarter backs; Flying Officer Dalziell, Flying Officer Farrington, D.S.O., half-backs; Flt. Lt. Wakefield, Flt. Lt. Thom, A.F.C., Flt. Lt. Simpson, Flt. Lt. Munday, Flt. Lt. Scroggs, Flt. Lt. Whitworth, Flying Officer Rose, and Serjt. Smith, forwards.

Brooklands.

A correspondent writes :—

A small fire broke out on the aerodrome on Sunday last (Oct. 26th), when one of the few remaining wooden buildings, used as a cookhouse and messroom, was destroyed. The Wey-



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bridge Fire Brigade luckily succeeded in preventing the fire from spreading to the hangars and other buildings—J. F. S.

To 27 Squadron.

A 27 Squadron (B.E.F.) reunion dinner will be held in London on Dec. 13th.

As all addresses are not known, would officers who have not received information, but who are desirous of attending, please communicate before Dec. 1st with Capt. E. C. Raworth, Lenzie House, East Parade, Harrogate?

To 56 Squadron.

The members of 56 Squadron who subscribed for the purchase of the silver model aeroplane presented to the late Major J. T. B. McCudden, V.C., D.S.O., M.C., M.M., in 1918 by the Squadron in honour of his splendid work with the Squadron, will be interested to hear that after much travelling about with the Squadron abroad, the model has now come into the possession of Mr. W. H McCudden—Major McCudden's father.

Mr. McCudden is, of course, very glad to have the model and wishes to acknowledge to all those who subscribed to its purchase his appreciation of their good feeling towards his late son.

FRANCE.

Lieut. Boussod, of the Military Aeronautics Service, arrived at Casablanca on Oct. 24th in order, it is stated, to find a suitable place between Kenifra and Mazagan for the erection of an airship hangar. It is rumoured that the Government intend to open an airship service over the circuit France-Morocco-Algeria-Tunis-France.

Algerian Affairs.

It is reported from Paris that one of the four French escadrilles which have reached Teniet-el-Hatel was attacked by a strong force of Beni Warain. A squadron of aeroplanes thereupon bombarded the villages of the neighbourhood, while a detachment made a sortie. The rebel chief, El Rogui, was seriously wounded and his troops were dispersed.

ITALY.

The Rome-Tokio Flight.

The Italian correspondent of The Aeroplane writes :—

The Rome-Tokio regularity flight seems likely to come off towards the end of November. The name of Commander Casagrande is now mentioned as a likely chief for the trip, and certainly some two or three Caproni triplanes—not biplanes as was incorrectly printed in a recent number of The Aeroplane—will accompany the SVAs. These, at any rate, are to carry parachutes, one believes of a new Italian design.

Commander Casagrande took a large part in the "Giovane Italia" work of landing men behind the Austrian lines. One who took part in this very sporting sideline tells me that the more dangerous members of the conspiracy landed from the seaplanes by ropes onto treetops. They carried enormous sums of money, and signalling was carried out by the display of washing—not always on washing day. The local habit of drying sheets on the ground assisted things happily.

Aviation in Libia.

Colonel Prandoni, who was in command of the very first squadron flights on Farmans carried out in this country years before the war, is now C.O. in Libia. As might have been reckoned upon, a lot of organising is being done in that colony. Some flights of unusual interest were recently chronicled in The Aeroplane.

An aerial survey of the routes from Rome to Asmara (Eritrea) is being undertaken. The Ministry of Transports is to be congratulated.—T. S. H.

RUSSIA.

Official Communiques (Bolshevist).

Oct. 31st.—In the Finnish Gulf coastal region there has been an artillery duel. In the course of the fighting an enemy aeroplane, which was correcting the fire, was brought down.

A recent message from Odessa to the "National Tidende" stated that an agreement has just been concluded between the Russian North-West Army and England, according to which England will support Yudenitch's action against Petrograd by supplying aeroplanes, tanks, etc.

The Attack on Krasnaya Gorka.

On Oct. 28th a combined naval and military attack upon the fortress of Krasnaya Gorka was opened. The visibility being poor, it was not possible to use aeroplanes for artillery observation. An aerial attack was made on the fortress before the bombardment opened and one hundred and forty 20-lb. bombs and forty 65-lb. bombs were dropped. It is reported that two barracks were destroyed and other damage done, but this is not official. It is also stated that the anti-aircraft defences of this town and Kronstadt give evidence of German gunners, guns, and shells.

The correspondent of the "Times" newspaper, writing on Oct. 30th from Björkö, of the British Naval Force co-operating with the Esthonians, says concerning the Krasnaya Gorka :—

"A photograph just taken shows that the westernmost six-inch battery has been badly smashed by air bombs, but the recent anti-aircraft fire was too accurate to allow a severe bombardment by the machines at our men's disposal.

"Indications of the presence of Germans in the fortress of Krasnaya Gorka have been noted by our flying men, who report that the guns are carefully treated and that the fortifications are in good repair.

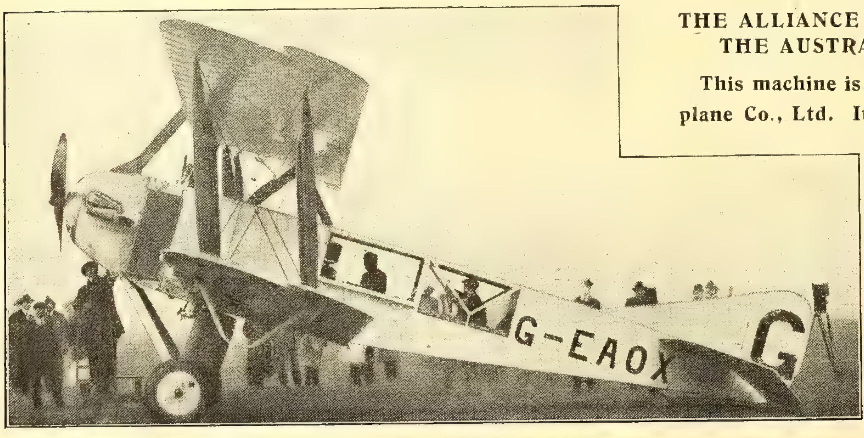
"The British air force, which numbers less than a squadron, is under Major Donald, the well-known Rugby football player, while the machines are in the direct charge of a South African, Lieut. Fairweather. The seaplanes are carried in the "Vindictive," and are under Capt. Grace, son of the famous cricketer."

TURKEY.

It is reported from Turkey that an aeroplane which recently descended at Kovno contained as passengers Lieut. von Geisner, Talaat Pasha and Djemal Pasha. Two other Germans were in the machine besides the first named, and all are said to have been attempting to escape.

A local newspaper, giving the information under reserve, says that the report is current there that Talaat and Djemal, fearing that the German Republic would hand them over to the Entente Powers, had recently decided to escape and to join Enver in Turkestan or Transcaucasia *via* Soviet Russia.

THE AUSTRALIAN AEROPLANE COMPETITION.



THE ALLIANCE AEROPLANE COMPANY'S ENTRY FOR THE AUSTRALIAN AEROPLANE COMPETITION.

This machine is an Alliance P.2, built by the Alliance Aeroplane Co., Ltd. It is fitted with a 450 h.p. Napier "Lion," is said to have a speed of 135 m.p.h., and is equipped with two wireless sets. The non-stop range of the machine is 3,000 miles. Details for comfort have been so carefully considered that even the wings and struts have been painted green to be restful to the eyes. The pilot and navigator are respectively Lieut. Roger Douglas, M.C., D.S.M., Aus.F.C., and Lieut. Ross, Aus.F.C.

The Alliance Entry.

Two pilots of the Australian Flying Corps were ready to start their flight to Australia on Oct. 31st, but the weather was not good enough. They are Lieut. Roger Douglas, pilot, and Lieut. Ross, navigator. Their machine is an Alliance P.2, built by the aeroplane company of that name, and is fitted with a 450-h.p. Napier "Lion" engine.

Lt. Douglas enlisted in the A.I.F. at the beginning of the war, and was at the landing on Gallipoli with the Australian Machine-Gun Battalion. In France, as a serjeant, he was awarded the D.C.M at Pozieres in 1916, and after receiving his commission in the field he gained the M.C. at Polygon Wood in Sept., 1917. He then joined the Aus. F.C., and after doing good work in France, instructed on S.E.5s. He also passed through a navigation course at Andover.

Lieut. Ross received his commission and pilot's wings in Oct., 1916. He was with the Aus. F.C. in France until Sept., 1918, when he was wounded whilst in a squadron of S.E.5s. He has had considerable training in navigation.

Both men have been working together since the Armistice. Lt. Douglas conceived the idea of flying home in 1916, and

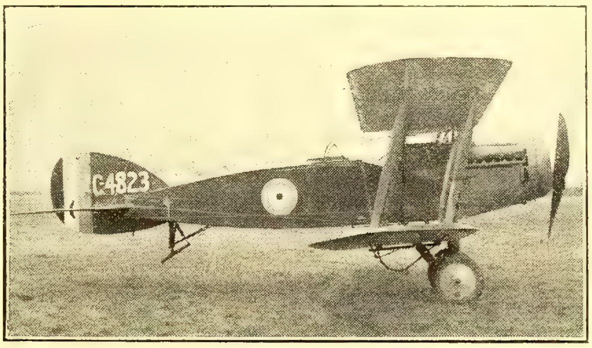
From the early days of aviation

The "Bristol" Aeroplanes

have been famous for

QUALITY
RELIABILITY
and
ENDURABILITY

The
"BRISTOL" FIGHTER
Type F2.B.



In September, 1917, a "BRISTOL" Fighter was delivered from the "BRISTOL" works and put into commission in the fighting area. It was unfortunately landed in Holland and soon afterwards was acquired by the Dutch Government. From that time until now, though in continuous use by Dutch pilots, it has never been repaired or renovated in any way, and every unit is exactly as when it left the "BRISTOL" works. Even the "Cellon" dope has never been renewed.

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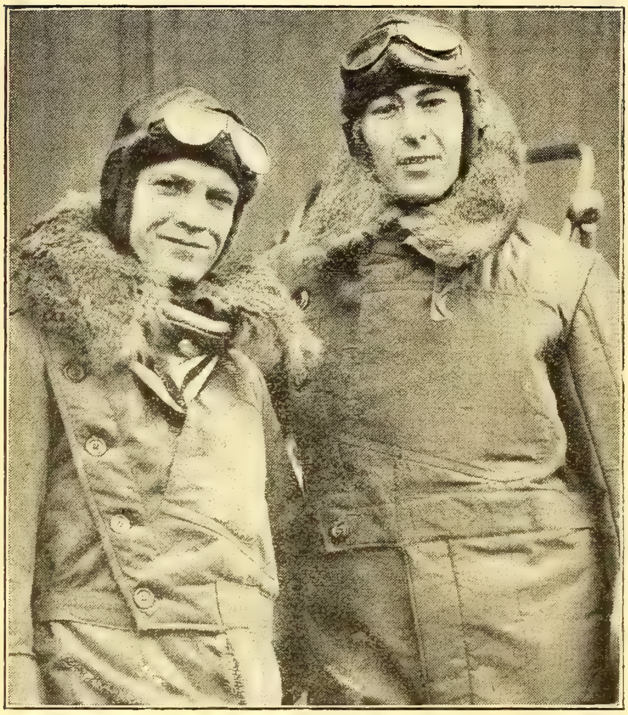


Lieut. Roger Douglas, M.C., D.C M. (left), the pilot, and Lieut. Ross, the navigator, of the 450 h.p. Napier-Alliance biplane.

immediately the Armistice was declared he set out to obtain a machine capable of doing the journey.

He has had some weeks' experience in flying an Alliance aeroplane fitted with a 450-h.p. Napier engine, and is confident that he could not have secured a better machine for this flight. It is particularly steady in the air, has ample reserve of power, and the engine, with many remarkable performances to its credit, can be relied upon to do all that is asked of it.

Sufficient food will be carried to last for five days. The machine is said to have a non-stop range of 3,000 miles.

THE VICKERS ENTRY.

Vickers, Ltd., have entered a standard Vickers-Vimy-Rolls bomber (two Rolls-Royce Eagle Mark VIII engines), which will be piloted by Capt. Ross Smith, M.C., D.F.C., A.F.C., and his brother, Lieut. Keith Macpherson Smith. Both Capt. and Lieut. Smith were born and educated at Adelaide, South Australia.

At the outbreak of war Capt. Ross Smith enlisted in the 3rd Australian Light Horse as a private, and sailed with the first Australian Expeditionary Force, landing in Egypt in December, 1914, and after four months on Gallipoli he gained his commission. In October, 1916, he transferred to 67 (Australian) Squadron, R.F.C., as an observer, and qualified as a pilot in Egypt in July, 1917. He then rejoined his old squadron, now known as No. 1 Squadron, Australian Flying Corps, stationed in Southern Palestine, and remained there until the Armistice

In December, 1918, he accompanied Major-Gen. Sir W. G. H. Salmond, K.C.M.G., C.B., D.S.O., and General A. E. Borton, C.M.G., D.S.O., A.F.C., on the first flight from Cairo to Calcutta, and after arriving at Calcutta proceeded with General A. E. Borton on his reconnaissance for aerodromes in Burma, Siam, Malay States, and the Netherland East Indies. He returned to England about a month ago.

Lieut. Keith Macpherson Smith, R.A.F., will act as reserve pilot and observer. On arrival in England during 1916 he joined the R.F.C. as a cadet, shortly after becoming a pilot, and was serving as an instructor in the North of England until the Armistice.

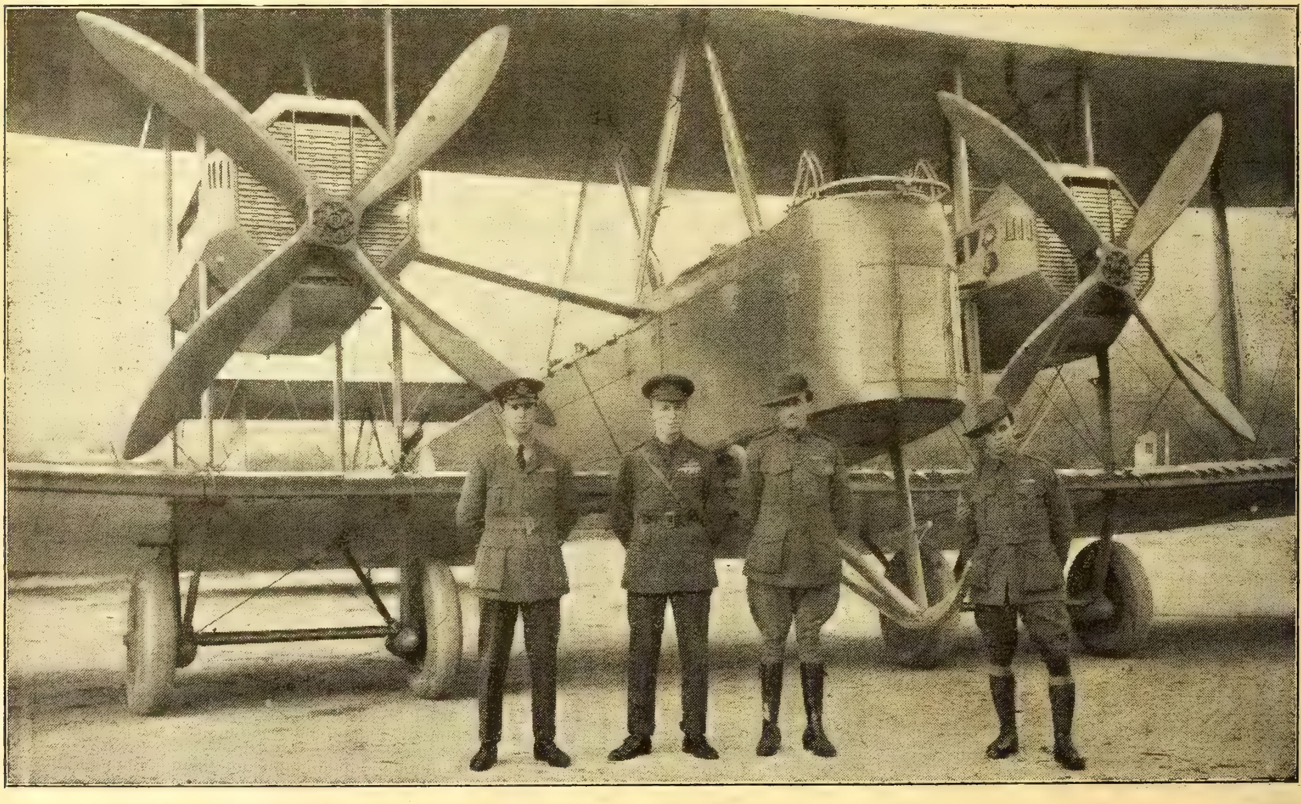
Capt. Ross Smith and his brother will be accompanied by Serjt. J. W. Bennett, A.F.M., M.S.M., and Serjt W. H. Shiets, A.F.M., who will act as mechanics. Both have seen service with the R.F.C. and both accompanied Major-Gen. Salmond, General Borton, and Capt. Ross Smith on their original flight to the East, and afterwards served in the recent Afghan campaign.

The aeroplane is identical with those supplied to the Royal Air Force, and is similar to the machine used by Capt. Sir John Alcock, K.B.E., D.S.C., except that for this flight a smaller petrol capacity is required. Petrol is drawn from the main petrol tanks by two Vickers Mark II centrifugal petrol pumps and delivered to the service tank, which forms a section of the top plane, whence it falls by gravity.

The general dimensions of the aeroplane are as follows :—span, 67 ft.; overall length, 42 ft. 8 in.; overall height, 15 ft. 3 in.; gap, 10 ft.; chord, 10 ft. 6 in. The maximum speed is over 100 miles per hour and the cruising speed is about 90 miles per hour. The weight of the machine empty is 3 tons, and the total weight fully loaded is nearly 5½ tons.

THE SOPWITH MACHINE.

Capt. Matthews, who left England on Oct. 21st, is held up by fog and rain near Cologne



The Vickers' "Vimy" biplane (two 375 h.p. Rolls-Royce engines) on which Captain Ross-Smith (second from left), Lieut. Keith Smith (first), Serjeant Bennett (third), and Serjeant Shiers (fourth), are attempting to fly from England to Australia.

THE PILOT OF THE SOPWITH-JUPITER RACER,

Mr. H. G. HAWKER,

SAYS

"THE ENGINE IS THE SMOOTHEST RUNNING RADIAL I HAVE EVER SEEN. THERE WAS NO VIBRATION OBSERVED ON ANY WIRE OF THE MACHINE.

AS REGARDS POWER, I CAN ONLY SAY WE HAVE HAD THE ALMOST UNIQUE EXPERIENCE OF FINDING EVERY PROPELLER TURNING AT MORE THAN ITS DESIGNED SPEED."

COSMOS

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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

THE TELEGRAPHIC ADDRESS OF CIVIL AVIATION DEPARTMENT.

It is notified by the Air Ministry that the telegraphic address of the Civil Aviation Department, Air Ministry, is now: "Aircivil, Airministry, London."

The telegraphic address "Civiatory, Estrand, London" has been cancelled.

THE CONTINENTAL AIR SERVICES.

THE AIRCO SERVICE.

Aircraft Transport and Travel, Ltd., have completed their tenth week of regular flying on the London-Paris service. Out of 154 flights scheduled, 147 have been successfully accomplished. Only one flight has been prevented altogether, and six others have been interrupted, three owing to weather and three on account of mechanical breakdown. The service has been carried out on thirteen days noted officially as unfit for flying.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Oct. 27th	D.H. 4a	Lt. Shaw	12.30 p.m.	2.19 p.m.			0
	D.H. 4a	Lt. Tebbit	2.30 p.m.	4.30 p.m.			2
	D.H. 16	Maj. Patteson			12.30 p.m.	Lympne 3 40 p.m.	4
Oct. 28th	D.H. 4a	Lt. McMullin	12.30 p.m.	2 55 p.m.			2
	D.H. 9	Lt. Chattaway	12.50 p.m.	3.15 p.m.			0
	D.H. 4a	Lt. Lawford			12.30 p.m.	3.30 p.m.	1
Oct. 29th	D.H. 16	Capt. Baylis	12.35 p.m.	2.45 p.m			0
	D.H. 4a	Lt. Tebbit			12.30 p.m.	Biggin Hill 3.15 p.m.	1
	D.H. 4a	Lt. Shaw			12.30 p.m.	Alighted in sea.	1
Oct. 30th	D.H. 9	Lt. Powell	12.30 p.m.	3.10 p.m.			1
	D.H. 4a	Lt. McMullin			12.30 p.m.	2.45 p.m.	2
Oct. 31st	D.H. 4a	Lt. Shaw	12.30 p.m.	2 45 p.m.			1
	D.H. 9	Lt. Chattaway			12.30 p.m.	3.30 p.m.	1
Nov. 1st	D.H. 9	Lt. Campbell-Orde	12.30 p.m.	3.15 p.m.			1
	D.H. 4a	Lt. Shaw			12.30 p.m.	5.00 p.m.	0

On Oct. 27th the wind attained a velocity of from 40-50 m.p.h. Major Patteson, flying from Le Bourget with four passengers, owing to the strength of the gale landed at Lympne, near Folkestone, at 3.40 p.m. The passengers and parcels proceeded to town by rail The emergency arrangements to meet such occurrences worked quite well, the Railway Co. delaying a train to enable the passengers and goods to be taken on board.

On Oct. 29th there were snowstorms, high-velocity winds, and bad visibility, one of the worst days experienced since the opening of the Airco service. The D.H.4a, piloted by Lieut. Tebbit from Le Bourget with one passenger, alighted at Biggin Hill, near Bromley Kent, at 3.15 p.m., owing to the stress of weather.

A similar machine, also flying from Paris, piloted by Lieut. Shaw, with one passenger, was compelled to alight in the sea close beside a small coasting vessel, the "Harlech," the crew of which took pilot, passenger, and parcels on board. The steamer put into Weymouth on the morning of the next day, and the express goods, after being passed by Customs, were sent to London by rail. The only inconvenience suffered by the pilot and passenger was wet feet. The machine was lost.

On Nov. 1st Lieut. Shaw left Le Bourget with express parcels. He was forced to land at Lympne owing to a broken petrol pipe. After making the necessary adjustment the pilot proceeded on his journey and reached Hounslow at 5 p.m.

THE HANDLEY PAGE SERVICE.

On account of the gale on Oct. 27th the Handley Page machine flying from Paris landed at Marden, in Kent. The journey took 4½ hours. On the same day Capt. W. L. Hope flew from Hounslow to Brussels in 2 hr. 25 min.

On Oct. 28th two women, aged respectively 75 and 73, flew from Brussels to London in a gale in 5 hours.

During the week ending Oct. 29th the Handley Page aeroplanes carried 38 passengers and 2,172 lb. of freight on the London-Paris route. In the same period 21 passengers were carried on the London-Brussels service, with 630 lb. of luggage.

On Oct. 30th the machine which left Paris at 11.15 a.m. during a snowstorm reached Hounslow at 2.45 p.m.

On Oct. 31st freight was carried to Belgium for the first time, the restrictions having been removed. On that day 15 passengers and 657 lb. of freight were carried on the London-Paris and Brussels routes. The machine flying from Brussels to London did the journey in 2 hr. 15 min.

From Nov. 3rd the Handley Page machines were scheduled to leave Hounslow for Paris and Brussels at 11 a.m. instead of at noon. Passengers will be picked up at the Piccadilly Hotel by motor-car at 9.30 a.m.

THE B.A.T. SERVICE.

On Oct. 27th all the machines on the Continental-London services were unable to make Hounslow the first landing-place in their flights from the Continent. There was a gale of 40-50 m.p.h. The British Aerial Transport Co.'s commercial machine, piloted by Major C. Draper, landed at Lympne, in Kent, having flown from Amsterdam.

THE LONDON-PARIS BEST.

The following letter has been received:—

Sir,—May we point out, with reference to the letter from Messrs. Martinsyde in your last issue, that we had no intention of claiming that Capt. Gathergood's 1 hr. 20 min. flight from Hounslow to Le Bourget on Oct. 16th was a speed record as between London and Paris. Obviously, in view of the 1 hr. 15 min flight of the Martinsyde from Hendon to Buc, with which of course we were familiar, it was not.

Capt. Gathergood's flight was made in connection with the daily operation of the London-Paris air express, and in issuing to the Press our usual nightly bulletin we added a few lines chronicling this flight and pointing out that 180 miles an hour—the average speed attained by Capt. Gathergood—was the fastest so far attained on the London-Paris route: meaning quite obviously the route over which we are flying daily between Hounslow and Le Bourget, and which is of course, in effect, the only route which aircraft now traverse commercially.

A copy of our bulletin, as printed in the news columns of the "Times," is appended herewith for your perusal. Had it been our intention actually to claim a London-Paris speed record the wording of our paragraph would, of course, have been very different.

In the page advertisement in the technical Press, of which Messrs. Martinsyde specially complain, though here again there is no claim to a record, the fact that for the sake of brevity the preceding paragraphs from the "Times" announcement were omitted might, it could perhaps be argued, make it less clear that what we were claiming was merely the fastest time between Hounslow and Le Bourget; and if any misapprehension should have arisen in this regard we desire naturally to express regret.

(Signed) ARTHUR E. TURNER,
Director.

Copy of Airco Bulletin mentioned above:—

LONDON-PARIS AIR EXPRESS.

Two specially chartered Airco machines, in addition to the scheduled 12.30 p.m. service, were required yesterday to deal with the passengers and parcels from London to Paris.

The machine on the 12.30 p.m. service from Paris, carrying passengers and express goods, alighted at Hounslow at

London-Paris

Air Express

Summary of First Ten Weeks' Flying.

August 25th, 1919, to November 1st, 1919.

Flights Scheduled	154
Flights accomplished	147
Prevented by weather	1
Interrupted by weather	3
Interrupted by mechanical defects	3
Number of Miles flown	37,750
Average Speed (M.P.H.)	105

The following is a summary from official reports of the weather flown through during these ten weeks.

Days favourable for flying	17
„ unfavourable for flying	30
„ noted officially as "unfit" for flying	13

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
25-27, Old Queen Street, S.W.1.

Full particulars regarding rates and freights can be obtained from Aircraft Transport and Travel, Ltd., 25-27, Old Queen Street, S.W.1, or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C., and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street, and Beak Street, W.; Lepaerial Travel. Piccadilly Circus (Criterion Corner); Carter Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; and Hernu, Peron & Co., 98-100, Queen Victoria Street, E.C.

PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysées.

2.54 p.m., after having combated successfully a 50-miles-an-hour wind in the Channel.

A racing Airco machine, piloted by Capt. Gathergood, leaving for Paris at 12.30 p.m. with some specially urgent dispatches, accomplished the flight from Hounslow to Le Bourget in 1 hr. 20 min., at the rate of 180 miles an hour, which is the greatest speed attained so far on the London-Paris route.

THE BLACKPOOL-MANCHESTER SERVICE.

The daily air service between Blackpool, Southport, and Manchester carried out during the recent summer by A. V. Roe and Co., Ltd., came to an end on Sept. 30th. Out of 222 flights scheduled, 194 were accomplished. Twenty-eight were prevented by weather and none interrupted by mechanical trouble. The total number of miles flown was 8,730.

The service was started three and a half weeks after civil flying was legalised in Great Britain. It was the first daily service by air to be instituted in this country and to be mentioned in railway guides.

At noon each day at least one Avro left the sands at South Shore, Blackpool, and headed for Southport, which was reached at 12.15 p.m. At 12.45 the machine descended at Alexandra Park, Manchester. The return flight started from Manchester at 2 p.m. The fare was five guineas for a single and nine guineas for a return ticket.

By degrees the service became popular and before long it was paying its way.

Whatever the Post Office may think, the people of Lancashire have no doubts as to the reliability of an air service carried out by Avro aeroplanes.

DOVER.

A Fairey seaplane belonging to Lieut.-Col. G. L. P. Henderson, M.C., A.F.C. (late R.A.F.), was wrecked on Dover beach in a gale on Oct. 30th. Col. Henderson started on a flight from Southampton to Amsterdam on the previous day, and had landed at Dover on account of the bad weather.

HALIFAX.

Mr. Herbert Sykes, O.B.E., of the Central Aircraft Company, arrived at Lightcliffe, near Halifax, on the afternoon of Oct. 26th, after a long flight from London. A temporary aerodrome was laid out in Stoney Lane, Lightcliffe, and a flying week was held.

Two machines, one piloted by Mr. Sykes, left Northolt aerodrome on Oct. 25th in very bad weather, heavy rain and fog. A landing was made at Bedford, and owing to difficulties it was decided to spend the night at Huntingdon.

The journey was resumed on the next day and the machines landed at Lightcliffe at 5.10 p.m.

On Oct. 27th Mr. Sykes made an exhibition stunting flight over Halifax.

LONDON.

HENDON.—On Saturday, Nov. 1st, Teniente Fernando de Mendoza and Teniente Fernando Navarro Capdevile, members of the Spanish Aviation Mission at present in this country, accompanied by Lieut.-Col. Spenser Grey, D.S.O., visited Hendon for the purpose of inspecting the machines of the British Aerial Transport Company. Major C. Draper, D.S.C., exhibited the B.A.T. saloon passenger and commercial aeroplane and also the B.A.T. Bantam. The visitors were greatly impressed with both machines, especially the evolutions of the Bantam.

HOUNSLOW.—The Air Ministry announced on Oct. 30th: The following "Notice to Airmen" has been issued:—

"Hounslow aerodrome is temporarily equipped for night-flying. Each evening, for a period at sunset, a lighthouse in the aerodrome will give three flashes every ten seconds in the following order: flash, one second; eclipse, one second; flash, one second; eclipse, one second; flash, one second; eclipse, five seconds. Ground searchlights and landing flares will also be displayed.

"These lights will be provided at any time during the night if notification is made to Hounslow that machines intend to land, or if a machine is heard in the air. These arrangements are subject to alteration, of which due notification will be given."

The mechanism of the lighthouse does not differ substantially from that of those used at aerodromes overseas during the war. It is of French origin and burns acetylene gas. The vertical beam is thrown from the flame reinforced by powerful reflectors. The lamp is so designed that there is no glass immediately above the burner.

The lighthouse is at present in an experimental stage. The next station to be equipped for night-flying will be Lympne.

NORTHOLT.—On Oct. 31st the Basuto chiefs who are on a visit to this country were taken up for flights at the Northolt Aerodrome. The Paramount Chief is named Griffith. Both he and his fellow-chief, Suko, are of bulky build.

It took several air mechanics to get Griffith into his flying kit, and as there was not a suit large enough for Suko he had to be wrapped in white overalls. Both chiefs laughed so heartily while they were being strapped up that their hilarity threatened to hold up the flight.

They were eventually wedged into the cockpit, and soon after leaving the ground encountered a heavy rain-storm. Griffith ducked behind the wind-screen, but Suko could not get all his massive frame under cover and was stifled by the rush of air and rain. Being a practical man he covered his nose with his goggles and thereafter thoroughly enjoyed the half-hour flight.

The Paramount Chief said he was very proud of being the first of his race to fly. The rest of the party were taken up for shorter periods.

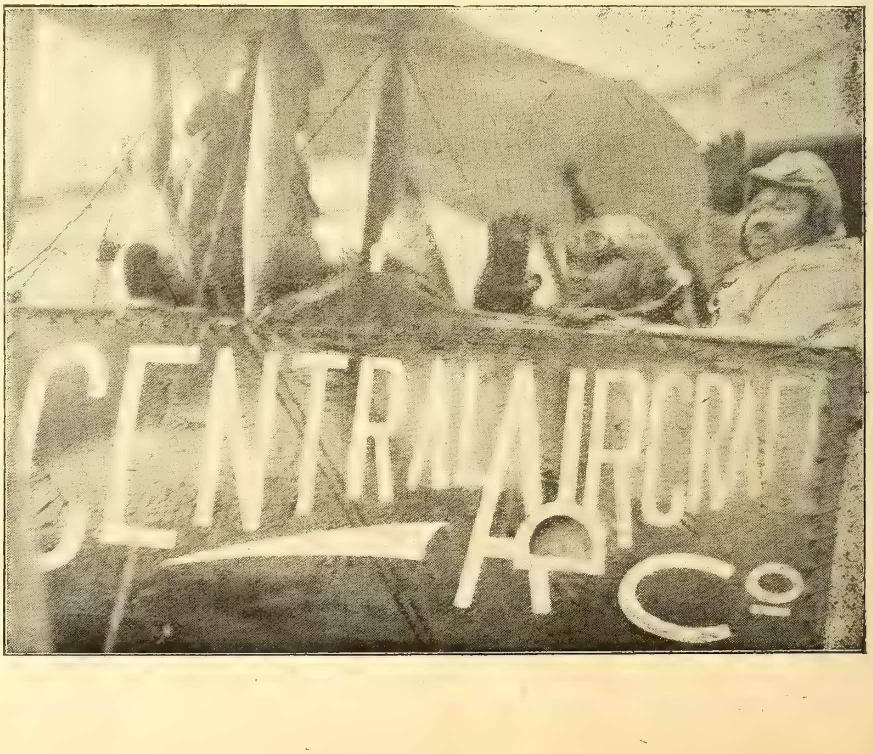
WINDERMERE.

It has been decided to keep the Avro seaplane station at Bowness open during the winter. In addition to taking up passengers, Capt. Howard Pixton is prepared to train a limited number of pupils during the winter. Capt. Pixton is almost the *doyen* of all pilots now regularly flying. His own flying ticket dates from 1910, in which year he joined Mr. A. V. Roe and went with him to America. Capt. Pixton won the Schneider Cup in 1914, and has also won many other prizes for flying contests.

CANADA.

CIVIL AERODROMES.

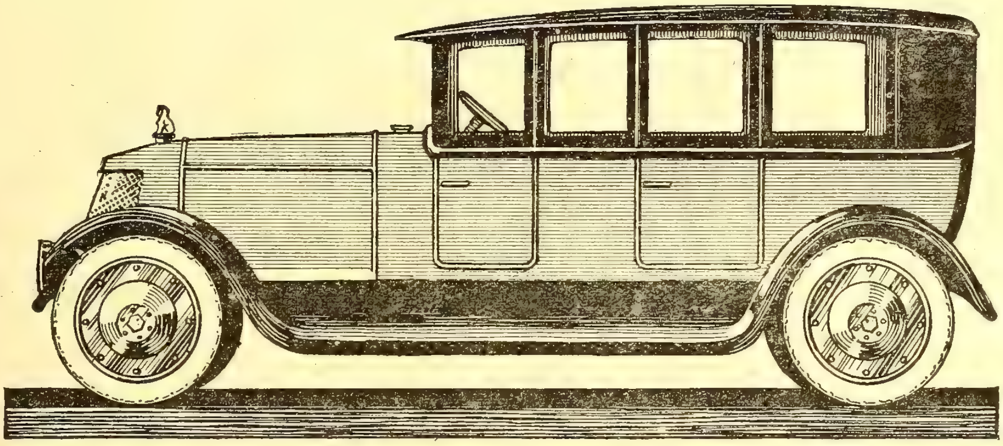
Colonel Biggar, vice-chairman of the Canadian Air Board, has announced that municipalities will be expected to erect their own landing grounds for aircraft. Saskatoon has already a civic aerodrome.



CREATING A PRECEDENT.—The first of the inhabitants of Basutoland to fly were Griffiths, the Paramount Chief (in front) and Suko, his fellow-Chief. In very unpleasant weather of mist and rain they made a half-hour's flight over London in an Avro biplane owned by the Central Aircraft Co., at Northolt on Oct. 31st. On account of his massive stature, tight lacing was necessary to get Griffiths into flying kit. Suko was too large for ordinary clothes and had to be rigged up in a capacious dustcoat. Dressing the Chiefs for the flight took half an hour, as they were very ticklish, and their continued hilarity almost prevented them from going up at all.

The ARMSTRONG SIDDELEY *Six Cylinder Car*

R.A.C. Rating 29·5 H.P. *Treasury Tax £8.8.0.*



Olympia Stand 72.

THE new Armstrong Siddeley 6-cylinder car is of entirely original design and embodies the experience gained during the past four years in the production of aircraft engines aggregating over 2,000,000 (two million) horse-power.

¶ You cannot buy a better car.

¶ It is a motor carriage of high efficiency, stately appearance, ample power, and constructed of the best materials. It is light. It is comfortable. It is dependable. It runs smoothly, silently and is easily managed.

¶ Maintenance costs are small. Three years' free inspection.
¶ The low price at which it is sold is made possible by its simple design and by quantity production.

PRICE of CHASSIS EQUIPPED WITH Disc Wheels and one Spare Rim; four 820 by 135 Rubber Studded Tyres; Specially designed Wings; Scuttle Dash with Instrument board; Lucas Engine Starter and Electric Lighting, complete with 5 Lamps, £720

Saloon Double Phæton (as illustrated) ... £1,000

ARMSTRONG SIDDELEY MOTORS LIMITED, COVENTRY.
Formerly The Siddeley Deasy Motor Car Co., Ltd.
(Allied with Sir W. G. Armstrong Whitworth & Co., Ltd.)
London: 10, Old Bond Street, W.1.

You cannot buy a better car

Godbolds

SOUTH AFRICA.

A combination of important interests connected with commercial aviation has been effected by the amalgamation of the South African Aerial Transports, Ltd., and the South African Aerial Navigation Co., the result of which is that Colonel Arnes, C.M.G., Major Miller, D.S.O., and Captain H. Tatton will direct the policy of the South African Aerial Transport, Ltd. The additional technical staff includes Major Honnett, Major Young, D.F.C., Captain Ross, D.F.C., Bar., Lieut. Thompson, D.F.C., and Lieut. Rutherford.

The Johannesburg "Star" of Oct. 2nd stated that flying would be undertaken in Johannesburg within a fortnight. The machines they have at present are Avro biplanes with 110-h.p. Le Rhône engines, and carry certificates of airworthiness issued by the British Air Ministry. As the company receives further machines the services will be rapidly extended.

The company's offices will be situated at 26-29, Exploration Buildings, Johannesburg.

CHINA.

The Purchase of Vickers' Aeroplanes.

The Chinese Government have purchased 100 "Vickers-Vimy-Commercial" biplanes for use in commercial aeroplane services. Their speed is 100 miles an hour and the endurance five hours. They carry sixteen passengers (in addition to the pilot) or one and a half tons of goods.

DENMARK.

The Danish correspondent of The Aeroplane writes :—

The first instance of commercial aerial photography work has now taken place here, the Sleswig pilot Schmidt having flown over Slesvig with a photographer, who took views in a Sablatnig biplane of the Danish Air Express Co. for a book to be issued in commemoration of the return of Sleswig to Denmark. A mechanic and one of the authors of the work were passengers in the flight.—E. H.

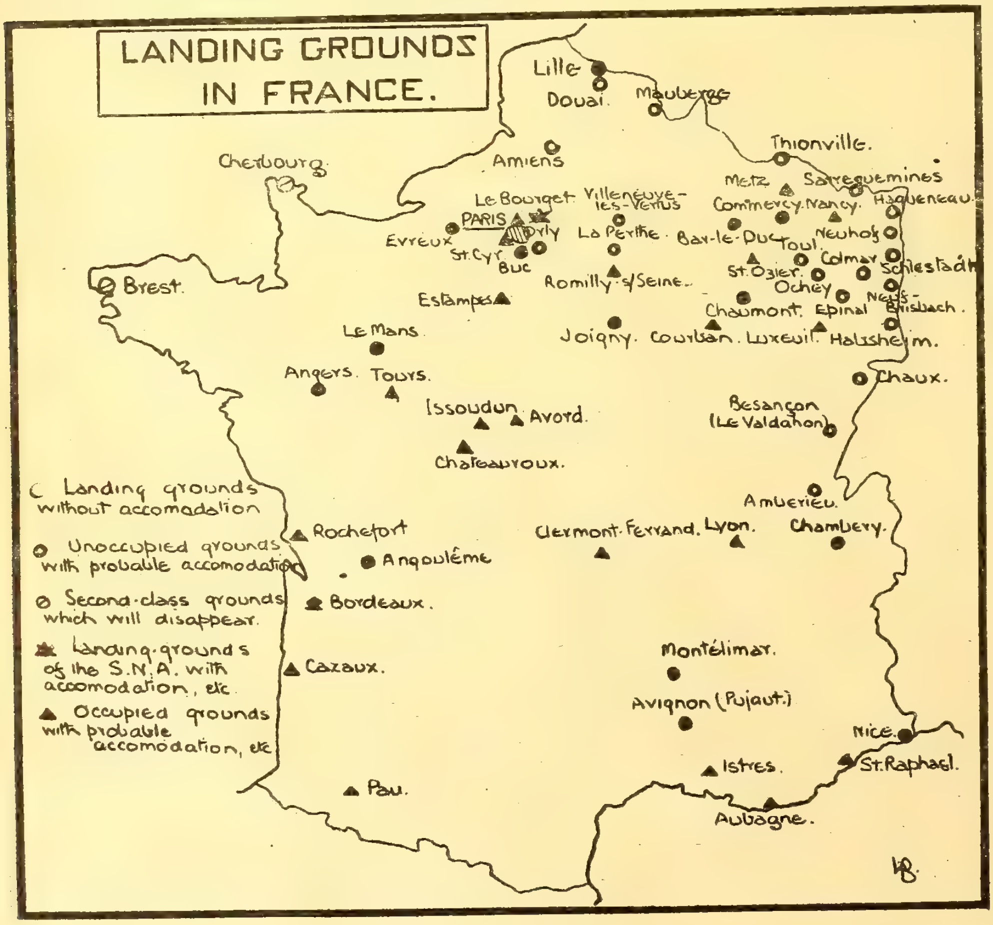
Finland.

It is stated in the "Times" of Nov. 1st that an air route covering practically the whole length of Finland has been started from Sortavala on the Lagoda to Murmansk. British and French aeroplanes are said to be used.

FRANCE.

Landing-grounds in France.

The Société de Navigation Aérienne has made a list of landing-grounds in France available for general use. The list is as follows, but it must be understood that the places enumerated are not the only aerodromes in France, but are those which are entered in the books of the S.N.A.



1. Landing-grounds without accommodation or fuel store :—Avignon (Pujaut), Lille (Rouchin), Angers, Angoulême, Bar-le-Duc, Buc, Chambéry, Chaumont, Commercy, Evreux, Joigny, Le Mans, Montelimar, and Nice.

2. Unoccupied landing-grounds with accommodation :—Ambérieu, Orly, Amiens (Bertangles), Belfort (Chaux), Colmar, Douai, Epinal, Habsheim, Hageneau, Le Perthe, Besançon (Le Valdehon), Maubeuge, Neu-Brisach, Ochey, Sarreguemines, Schlestadt, Strasbourg (Neuhof), Thionville, Toul, and Villeneuve-les-Vertus.

3. Military landing-grounds occupied and with accommodation and fuel store :—Avor, Le Bourget, Cazaux, Chateauroux, Clermont-Ferrand (Aulnat), Courban, Dijon, Etampes, Metz (Frescaty), Issoudun, Istres, Luxeuil, Lyon, Nancy (Mabzeville), Pau, Romilly, Saint-Cyr, Saint-Dizier, and Tours. In this category should be included seaplane stations (French Navy): Aubagne, Brest (Guiparas), Cherbourg (Monteburg), Rochefort, and Saint-Raphael.

4. Landing-grounds of the S.N.A. with accommodation and fuel store :—Bordeaux (Theynac) and Le Bourget.

A Paris-Casablanca Flight.

Lieut. Boussotrot, who piloted the Farman "Goliath" in the attempt to reach Dakar, left Tousseus-le-Noble on Nov. 1st, flying the tiny Farman biplane "David" (40 h.p. engine). He is alone and intends to fly to Casablanca *via* Bordeaux, Biarritz, Saint Sebastien, Vittoria, Madrid, Cordova, Seville, Gibraltar, Tangiers, and Rabat. If he reaches Casablanca safely he intends to make a tour throughout Morocco calling at Mogador and Agadir. Later he will return to Paris by Gibraltar, Barcelona, Madrid, Perpignan, Toulouse, Marseilles, Avignon, Lyon, and Dijon No special preparations are made for this flight, and he will be for a space a genuine tourist of the air. He is to keep a careful diary of his flight in order that his experiences may be of value to others.

Aerial Navigation Firms.

The following list of French companies engaged in aerial navigation, extracted from "L'Auto," is published for information :—

Société des Avions. H. et M. Farman, 167, Rue Silly, Billancourt.

L'Aero Navale, 46, Rue de Villier, Levallois-Perrot.

Compagnie des Messageries Aériennes, L. Breguet, 2, Rue Galilée, Paris.

Compagnie Générale Transaérienne, M. Amand, 28, Avenue Carnot, Paris.

Compagnie Aérienne Française, M. Ballyguier, 89, Rue Cambon, Paris.

Syndicat du Réseau Aérienne Transafricain, MM. de Valitch and Cohen, 126, Rue de Provence, Paris.

Compagnie des Transports Aériens en Guyane, M. Dutertre, 6, Rue de Hanovre, Paris.

Compagnie des Grands Express Aériens, M. T. Villiers, 3, Rue d'Anjou, Paris.

Compagnie de Navigation Aérienne, M. Latecoère, 182, Boulevard Haussmann, Paris.

Société des Transports Aéronautiques du Sud-Ouest, M. Gindner, 24, Rue Grange-Batelière, Paris.

The Salon de l'Aeronautique.

A Handley Page aeroplane is to be exhibited at the Sixth International Aircraft Exhibition which will open at the Grand Palais, Paris, on Dec. 19th.

A Paris-Metz Air Service.

The Italian correspondent of The Aeroplane writes :—

In the course of a speech recently pronounced at Rome, Col. Piccio, Aviation Attaché at Paris, stated that last June he carried out a 500-kilometre flight three times weekly between Paris and the Rhine Provinces (Metz). The trip took three hours, and was continued regularly for the whole month without any let or hindrance, the route flown over being Paris, Chalons, Metz, and the Rhine, leaving Orly

G. R.

By direction of the Disposal Board

AIRCRAFT DISPOSAL DEPARTMENT

MINISTRY OF MUNITIONS.

BESSONEAU HANGARS.

A quantity of the above are available in different parts of the country. These Hangars are constructed with an exceptionally strong wooden frame-work, easily and quickly erected. No foundation is required and they are covered with strong weatherproof canvas, and besides being suitable for aircraft would be also suitable as temporary buildings.

A typical size of Hangar is **60 ft. by 60 ft. by 13 ft. high.**

The locality, together with any further information required, may be obtained from the—**CONTROLLER, AIRCRAFT DISPOSAL DEPARTMENT, WELCOME CLUB, EARL'S COURT, (nearest Station—West Kensington District).**

Telephone—Western 4950. Telegrams—Clearhouse, Aerosupply, London.

IMPORTANT.—Note change of address from York House, Kingsway, to Earl's Court, as above.

NOTE.—For further particulars of other Government Property for sale see "SURPLUS" price 3d., at bookstalls, or by quarterly subscriptions of 2s. post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.

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MINISTRY OF MUNITIONS.

By Direction of the Disposal Board.

(Lands and Factories Section.)

FOR SALE.

WYE AERODROME,

KENT.

Area: About 86½ Acres.

For disposal as a whole, or the buildings and the land on which they stand, without the Aerodrome itself.

The BUILDINGS are of CORRUGATED IRON, BRICK and WOOD; the Flight Sheds Corrugated Iron with wood frames, tarmac floor, concrete foundations. Electric Light Plant, Water Supply including Storage Tank. Permanent tarmac roads. Asphalte Paths.

In addition to its use as an **AERODROME,** the Buildings are suitable for

FACTORY, SANATORIUM,
STORAGE, TRAINING INSTITUTION,

and many other similar purposes.

The site is occupied by the Government under the Defence of the Realm Regulations and can, if necessary, be acquired under and subject to the provisions of the Defence of the Realm (Acquisition of Land) Act, 1916.

For further particulars, apply to Disposal Board D.B.1.a 3, Room 135, Charing Cross Buildings, Villiers Street, London W.C.2.

NOTE.—For particulars of other Government Property for sale, see "SURPLUS," price 3d. at all Bookstalls; or by quarterly subscription of 2/- post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London. S.W.1.

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MINISTRY OF MUNITIONS.

By Direction of the Disposal Board.

(Huts and Building Materials Section).

For Sale by Tender.

KITE BALLOON SHEDS AND COVERS.

Tenders are invited for the following

At No. 16, Kite Balloon Base, Menefield, near Plymouth.

6 Kite Balloon Sheds and Covers,
96 ft. by 36 ft. by 35 ft.
Wooden Frame, Canvas Covers.

Tender Forms, permits to view, and full particulars may be obtained on application to the AREA DISPOSAL OFFICER, 27, High Street, Salisbury. Telegrams:—Hutments, Salisbury.

NOTE.—For particulars of other Government Property for sale, see "SURPLUS," price 3d., at all bookstalls, or by quarterly subscription of 2s. post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.

on Monday, Wednesday, and Friday, returning on the alternate days. Radio-telegraphic and meteorological stations ensured the safety of the service, which was thus highly successful.—T. S. H.

Flower Transport.

The Danish correspondent of The Aeroplane writes :—

On Nov. 6th a French aerial transport service of flowers is to be started to Denmark, as a Copenhagen firm has contracted with Breguet to have the Paris-Casablanca pilot, M. Roget, to fly, accompanied by a mechanic, with one intermediate landing in Holland, to the Danish capital in one day. Half a ton of Nizza flowers will be carried for a payment of 12,000 frs., which includes the right of a return load of 200 kg. or two passengers.

It should be possible to sell flowers sent in this way more cheaply than home-grown roses and gilli-flowers. If successful, this aerial flower service will be established as a regular feature.

Managers of Aero-Stations.

Certain aviators in France are demanding that the following qualifications shall be possessed by all entering for the examination which is to be held for the selection of managers for the new series of aero-stations now being laid out throughout France :—(1) To have been pilot; (2) to have passed a stated period at the front or in hospital owing to wounds received in action; and (3) to have been decorated or mentioned in dispatches.

The Paris-Melbourne Flight.

M. Poulet is now at Avlona, where he has been detained by the bad weather.

GERMANY.

The Danish correspondent of The Aeroplane writes :—

A New Air Traffic Company.

The negotiations for months *re* the formation of a commercial aviation enterprise in Bavaria have now taken the final form of "The Bavarian Air Traffic Co., Ltd.," with a capital of 500,000 marks (£25,000 normal value), by the co-operation of the following firms : Bavarian Rumpler Works in Augsburg, Bavarian Air Lloyd, Bavarian Aircraft Works, Bavarian Motor Works and Gotha Aircraft Works. The new concern will carry out no direct service. This will be carried out by the above-mentioned companies. The Air Traffic Co. will limit its activities to organising development of the enterprise, to propaganda, daily and technical work, besides co-operation with other concerns.

The Bavarian Government will not participate directly in the new enterprise, but has supported it by granting it the exclusive concession rights for aerial business transport of passengers and mail and for photography work within Bavaria. For this work a "Bavarian Photo Co., Ltd.," has been formed chiefly by the co-operation of the photographic industry.

The Army authorities are to sell aeroplanes, aerodromes, with works and equipment, to the concern on favourable conditions. The passenger fares have not been fixed so far, but 10 pfennings (1¼d.) is to be paid for letters beyond the ordinary stamp, and a dispatch fee is to be paid extra if express service is asked for. The price for paper-sending has not been settled yet, but is likely to be fixed at 10 marks (10s.) per kilo.

Another New Company.

A "Southern Germany Aerial Navigation Co." for Würtemberg and Baden is under preparation, to be formed mainly by the Zeppelin concern and the Daimler Motor Works. A close co-operation of the "Southern Germany Aerial Navigation Co." and "The Bavarian Air Traffic Co., Ltd.," is being arranged. Their main task will be to bring out first the true commercial aeroplane; for, as German military aircraft is a thing of the past, the outlook is for going ahead at commercial aviation, as German papers express in their comments when saying : "It is no secrecy that the successful military aeroplane cannot straightaway be employed as a commercial aircraft."

A New Zeppelin.

Words to the following effect are contained in a note in the German aero-paper "Illustrierte Flug-Welt" : "The Zeppelin concern has completed a giant airship for oversea voyages of the dimensions of a war cruiser."

The Antics of the "Bodensee."

The very favourable results of the first month's service of the airship "Bodensee" are now available, as she has between Aug. 24th and Sept. 23rd carried 1,300 persons in 30 voyages of 208 hours' duration, thereby covering a distance of 20,000 kilometres without any incidence (incidents ?).—Hi.

The Bodensee on a voyage from Friedrichshafen arrived at the aerodrome near Berlin at 6.30 p.m. on Nov. 2nd. About thirty persons were in the airship. The wind was very strong. No order was given for landing the vessel, and the crowd who were holding the landing ropes appeared to be the friends of the passengers in the airship, with the exception of some half-dozen officials.

The Bodensee nose-dived five times, and bumped the ground three. One of the people on the ground was killed and five were injured. The Zeppelin then ascended, the lights went out and she vanished. When the airship was being held down the passengers were able to speak to their friends on the ground. One lady was heard to tell her husband that they had had a very bad voyage, and that she would never undertake it again.

The Hamburg-Amerika Line afterwards issued the information that the vessel was safe, and came down in the Harz Mountains. All the passengers were saved. The ship was not seriously damaged, and will return under its own power.

GREECE.

A Handley Page machine, piloted by Capt. W. Shakespeare, arrived at Athens on Oct. 30th after a journey by stages from London. The machine is visiting Greece for the Aviation Exhibition in Athens.

Bad weather delayed the progress of the machine, and during its flight down the Italian coast from Pisa to Rome it encountered a severe wind-storm which threatened to divert its course over the Mediterranean. The stages of the journey were London-Paris-Lyons-Gulf of Genoa-Pisa-Rome-Benevento-Taranto-Athens.

HOLLAND.

At the E.L.T.A. Aerodrome.

Capt. Hinchcliffe and Mr. Shanks are still over in Holland with their Avros, but the weather has been too bad of late to permit of much flying. In the intervals Capt. Hinchcliffe finds occupation and amusement in negotiations with the Customs authorities over the valuation of material.

They are still using the E.L.T.A. Aerodrome, which is now a most deserted place, overshadowed by the presence of Herr Fokker, who has purchased all the exhibition buildings and the fencing surrounding the aerodrome. The rivalry of commercial aeroplanes seems to be no less keen than were the contests of the war.

A four-engined Handley Page aeroplane, which had been exhibited at the E.L.T.A., flew from Soesterberg, Amsterdam, to Hounslow on Oct. 30th in 2½ hours.

SWITZERLAND.

On Oct. 19th about 3,000 people assembled at Echallens, not far from Lausanne, for a flying meeting. Mr. Bradley, chief pilot of the Ecole Aero, flew over on his Avro at 2.30 p.m., and before landing gave a performance of trick flying, ending in three successive loops. Passengers were then taken up, among them many ladies and several people of note in the place. All were delighted with the machine and the pilot. The Avro was kept busy for 3½ hours, and when the meeting was over a passenger booked a seat for the flight back to Lausanne.

On the following Sunday a meeting was held at Geneva on the football ground, from which one of the goals was removed to make landing space. The ground does not seem to have been too good, however, as "La Suisse" writes that the "biplan Avro" shaved over the poplars bordering the cliffs of the Arve and pulled up about a dozen metres short of the other goal-posts.

The booking of passenger seats was brisk, and most of the passengers "ont demandé a faire des loopings."

Capt. Bradley made several exhibition and passenger-carrying flights at Nyon on Nov. 2nd. Whilst flying with a passenger he crashed while trying to avoid overhead electric cables. The pilot and passengers were only slightly injured, but the machine was destroyed.

UNITED STATES OF AMERICA.

Another Cross-Atlantic Prize.

A Frenchman, who has resided for many years in New York, has offered a prize of 125,000 francs (nominally £5,000) to the first aviator who flies from New York to France or France to New York. The Aero Club of America is drafting the regulations.

Either a seaplane or aeroplane may be used for the flight which must be made between May 20th, 1919, and May 29th, 1924. The entrants must be subjects of one of the Allied Powers, and must hold the pilot's certificate of the F.A.I. The entrance fee of £46 must be paid to the Aero Club of America, and should be forwarded with the notice of entry at least 14 days before the entrant intends to attempt the flight. He must also inform the Club of the point from which he intends to start and (approximately) the area in which he proposes to land.

If an aeroplane is used the point of departure must be within 50 miles of Paris or New York. A single machine must be used for the flight.

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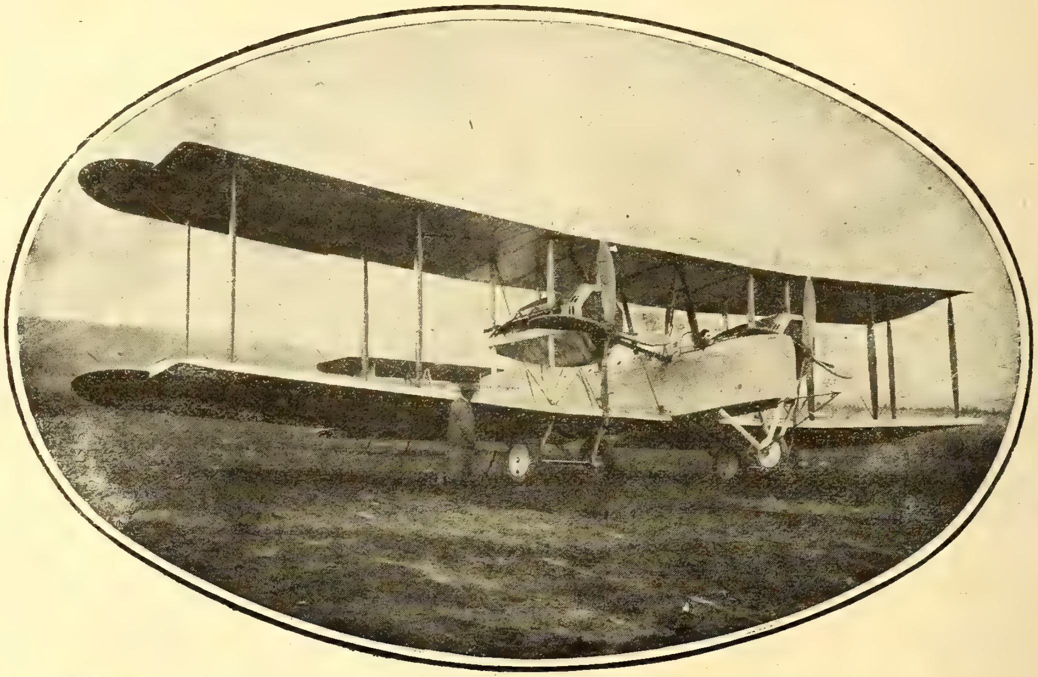
THE TRANSATLANTIC FLIGHT
"VICKERS - VIMY - ROLLS"



The first direct Flight from Newfoundland to Ireland (1,900 miles) was accomplished by this Aeroplane in 15 hrs. 57 mins. 4 tons of Petrol and Oil were used.

Aviation Department,
Imperial Court, Basil Street,
KNIGHTSBRIDGE, S.W.3.

Telegraphic Address :
Vickerfyta, Knights, London.
Telephone
Kensington 6520 (4 lines).

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

A first instalment of an article describing the products of the Marine Aircraft Experimental Depôt at the Isle of Grain appears in this number.

This article and the accompanying illustrations are published by permission of the Director of Research, the Air Ministry, who has placed a large number of the photographs at the disposal of The Aeroplane for this purpose.

The work carried out at this establishment has never been widely advertised and is generally little known, but, as this article indicates, a large amount of useful experimental work was carried out, and some very original machines were produced there during the war.

A brief history, profusely illustrated, of the German seaplanes designed and built by the Friedrichshafen Flugzeugbau during the late war will be found on page 1609 *et seq.* German seaplanes are of even greater interest than are German land machines, if only because very little was actually seen of them during the war, and the number of captured specimens—in any recognisable state—was almost nil.

The Martinsyde two-seater machine which is to attempt the Australian flight is illustrated and described on page 1596.

A note on the Italian-built semi-rigid airship bought by the British Admiralty appears in this issue.

THE WORK OF THE MARINE EXPERIMENTAL AIRCRAFT DEPOT, ISLE OF GRAIN.

By Capt. W. H. SAYERS, Late R.A.F.

At the outbreak of war the Isle of Grain Air Station was one of the largest of the seaplane stations of the Royal Naval Air Service. During the first six months or so of hostilities it was regarded as an important war station, and in addition to seaplane patrols it provided a reception depôt for seaplanes, and a fitting-out establishment for the earlier seaplane-carrier ships. Its proximity to Sheerness Dockyard and to Short Bros.' works at Eastchurch and Rochester—then practically the only source of seaplane supplies—particularly fitted it for that purpose

Grain Repair Depot.

Even before August, 1914, it had been decided to make Grain Island something more than merely a seaplane station, and it was intended to establish there the Royal Naval Air Service Repair Depôt. This project survived the beginnings of war, and what had been early in 1914 the Salvation Army Congress Hall in Kingsway, purchased by the R.N.A.S. during that summer, was re-erected at Grain some hundred yards from the Air Station proper, and equipped with tools, power plant, and drawing-office. It was commissioned under Squadron Commander G. W. S. Aldwell, R.N., as the R.N. Aeroplane Repair Depôt early in 1915, as an entirely separate command. The Port Victoria Station Hotel was commandeered and converted into quarters for the men, and the Royal Corinthian Yacht Club-house was used as the officers' mess. This establishment became known as Port Victoria to distinguish it from the adjacent Air Station.

Although the establishment continued to be known as the Repair Depôt for some considerable time, very little repair work was carried out there. For a short time in its early history it was nicknamed the Royal Naval Tail Plane Factory, because for some months its only productions were a series of new tail units for various machines which had been found in service to be insufficiently stable.

A notable incident of this phase of its career was the evolution from the Sopwith "Schneider" of the "Baby" seaplane, involving the abolition of warping wings and the substitution of ailerons, the fitting of an entirely new tail unit of considerably greater area, and some modification to the floats.

Thus Port Victoria Repair Depôt was gradually diverted from its proposed functions and turned into a purely experimental workshop.

The Experimental Armament Department.

During the latter part of 1915 a second shed at Port Victoria intended as an extension to the Repair Depôt was erected, but it was annexed by an Armament Experimental Department for their workshops.

This department, although it was in many ways more akin to the Repair Depôt than to a war station, was placed under the command of the Grain Air Station, with Lieut.-Commander Robertson as the head of the department.

The Test Flight.

At a date early in 1916 the third of the Grain experimental sections had its origin in the shape of one single Flight Sub-Lieutenant, attached to Port Victoria for discipline, but under the orders of K Section, Air Department. This officer—one F. E. Sandford, now Squadron Leader in charge of what was then Port Victoria—constituted the Seaplane Test Flight.

At the end of 1916 Wing Commander Aldwell was transferred to the command of the Dunkirk Repair Depôt, Grain Repair Depôt was placed for discipline under Grain Air Station, with Squadron Commander H. M. Cave-Brown-Cave as O.C. Repair Depôt. By this time Port Victoria had grown to three large sheds, the original shed being now machine and fitting shop only, a further shed served as an erecting shop, and the third was a running shed with one aisle partitioned off as a drawing-office.

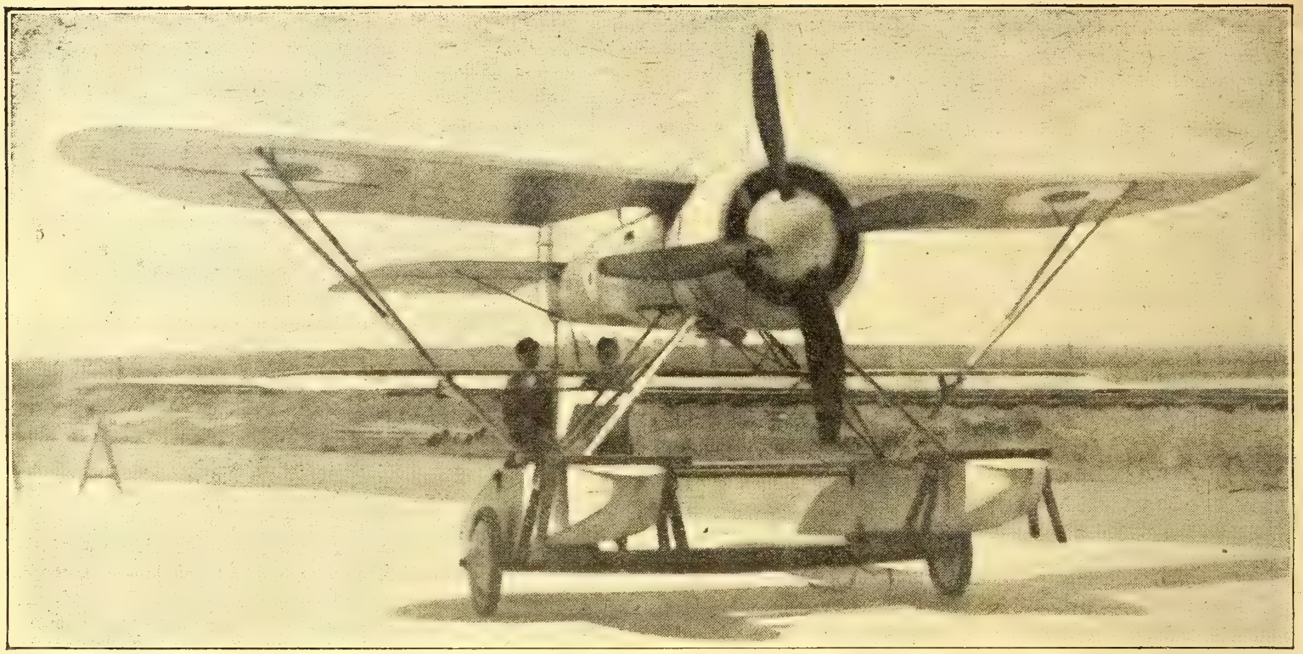
The Test Flight became a separate department under Squadron Commander Travers, and had been allocated sheds at the Air Station—now declining in importance as a war station—and Grain as a whole became practically a seaplane experimental station and acceptance depôt under the command of Wing Commander (Major, R.M.L.I.) C. E. Risk.

At this date the R.N.A.S. possessed a test flight for land machines at Eastchurch, with Squadron Commander H. R. Busteed in command.

On the formation of the Air Board it was decided that all future land machines should be tested at Martlesham, and Commander Busteed was transferred to Grain, succeeding Commander Cave-Brown-Cave at the Experimental Construction Depôt, as Port Victoria was now officially named.

Grain had now become the Naval Aircraft Experimental Depôt, uniting under a single command Experimental Construction Depôt, Seaplane Test Depôt, and Experimental Armament Section. In addition it was used to some extent as a seaplane acceptance depôt.

Wing Commander Risk was succeeded in the command of Grain by Wing Commander L'Estrange Malone, Wing Commander E. F. Briggs, and finally by Wing Commander Busteed. Squadron Commander Robertson was raised to Wing Commander and translated to the Bolo House, and was succeeded at the Experimental Armament Depot by Lieut.-Commander Chalmers, R.N.V.R., who held the position, as Major, R.A.F., till after the conclusion of hostilities.



P.V.2 (100 h.p. Mono Gnôme engine), the first machine completely designed and constructed at Grain in her original form.

Squadron Commander Travers also received merited promotion and was translated to the Technical Department, being succeeded in the command of Test Depôt by Squadron Commander (later Major) M. E. A. Wright, and on Col. Busteed's accession to the whole command, the original test flight pilot at Grain, then become Major F. E. Sandford, succeeded as the officer commanding the Experimental Construction Depôt. Since the armistice other changes have occurred, but the above outline serves to indicate the general history of the establishment during the war.

Of the three main departments into which the Station was divided, the work of the Experimental Construction Depôt (known as E.C.D.) is probably the most generally interesting.

A good deal of the work done by the Armament Depôt was extremely important, dangerous, and at times amusing, but the nature of its work cannot here be described in detail for obvious reasons.

Except in very general terms the present writer is unable to do justice to the experimental work of the technical officers of the Test Depôt, but it is hoped that a description of some of their trials in the work of devising methods of measuring aeroplane performance will one day be forthcoming.

Experimental Machines Built by E.C.D.

The most important step in the diversion of the Port Victoria Repair Depôt from its original purpose was due to the initiative of Squadron Commander J. Seddon, R.N., as he then was, of K Section, Air Department, Admiralty. The habit, persistent for long after, of attempting to fly Sopwith "Baby" seaplanes with two 65-lb. bombs attached to them was then in its infancy, but Commander Seddon had even then realised that the "Baby" was not really up to the work. What was really needed was a seaplane of about the same overall dimensions as the "Baby" which, carrying the bomb load, should possess a getting-off and landing speed no higher than that of the "Baby" and a considerably greater ceiling.

P.V.1.

A study of certain N.P.L. wing tests convinced him that a wing section might be developed giving much higher lifts than those usually employed, and that with such a wing the desired machine might be produced by some sacrifice of top speed.

The matter was referred to Port Victoria and it was decided, early in 1916, to experiment by converting a Sopwith "Baby" and fitting it with high lift wings.

The result of this experiment was a curious machine known as P.V.1, which consisted of a Sopwith "Baby" fuselage and chassis, equipped with a pair of heavily cambered wings of the same total surface as the original wings, but of greater aspect ratio and with a fair stagger, and a pair of enlarged floats.

As it was desired to carry out the trials in the shortest possible time, and as the machine was meant purely as a wing test and not as a war machine, no attempt was made to save weight in the structure. The old wing root spars in the fuselage were sawn off flush and their remains left *in situ,* the wings were put on where they gave the pilot the best view, and the machine's centre of gravity was adjusted to the new wings by putting lead into the floats.

Thus when complete the weight was nearly 300 lb. more than that of the "Baby," and yet with an additional 300 lb. of lead as load P.V.1 with 100 h.p. got off and landed at 35 knots and took her 600 lb. total of added weight to over 8,000 ft. and was entirely free from "sogginess."

True the top speed was only 67 knots—but that was little worse than had been hoped for, and rather better than was feared. The minimum speed and climb were, however, at least as good as had been expected.

This machine was kept at Port Victoria for some time and was used for experimental purposes. Amongst other trials she was once taken off a truck on the Grain railway siding in the course of some of the earliest tests connected with the problem of catapult gears for shooting machines off ships' decks. Eventually she was sent to Calshot as a preliminary training machine for "Baby" seaplane pilots.

Early Deck Landing Trials.

At about the same date the Repair Depôt began experimental work on deck landing devices. The first of these—an inclined wire-rope way to be fitted over the stern of the ship—was tried and a B.E. fitted with a special chassis was actually landed thereon. This idea was dropped in favour of sandbags attached to ropes stretched across the landing deck and an attachment to the machine which picked up successive ropes during the process of pulling up. This line of experiment went as far as the manufacture of all the fittings for test on a standard Avro, but was then dropped for nearly eighteen months, and later developments of this line of work will be dealt with in future instalments.

P.V.2.

The idea of designing a bomb-carrying seaplane of the "Baby" type at Grain was abandoned in the belief that the "Hamble Baby" would supply the need, and Grain was instructed, at the instance of Commander Seddon, to design a small, fast seaplane for Zepp.-strafing. The special features of this machine was to be its armament—one two-pounder Davis gun, which had to be carried over the upper plane, to be clear of all wing bracing, and yet accessible to the pilot for loading. A low landing speed—not more than 40 knots—the ability to reach and cruise at 10,000 ft., and a high speed of approximately 80 knots were asked for, with three hours' fuel, 10 rounds of ammunition, and a 100-h.p. Mono. Gnôme engine.

Commander Seddon suggested that a monoplane with the P.V. high-lift wing would meet the case, and actually the machine designed was almost a monoplane. The upper wing sprung from the top rail of the fuselage, with a lower plane of much smaller span and chord beneath the fuselage, carried therefrom by short centre section struts. The wing bracing consisted of a steel tube strut from the float chassis to the lower wing, and thence two struts to front and rear spars on the upper wing on each side.

The lower wing was really used more as a stiffener for the main bracing struts than as a lifting surface.

Ailerons, which washed out from the normal wing camber at their inner ends to a pronounced reflex curve at the tips, were fitted to the upper wing only.

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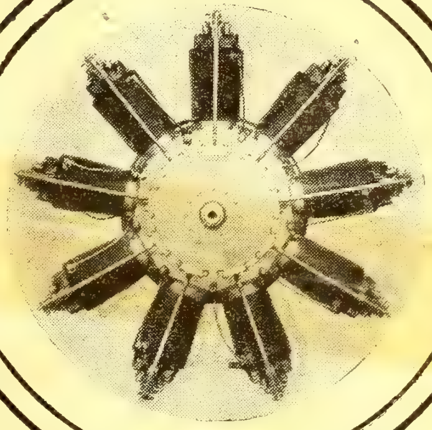

The Engine illustrated is the DRAGONFLY—340 h.p.—9 cyl. (Static Radial).

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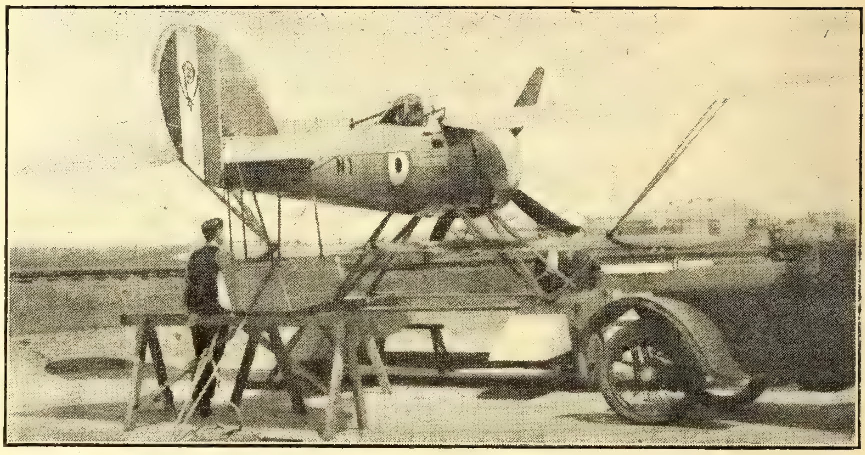
There were neither flying, landing, nor incidence wires in the structure, the wing lift being transmitted *via* the s[illegible] tubes to the chassis and thence to the fuselage.

The fuselage was of the usual wire-braced type, carrying a 100-h.p. Mono Gnôme at its front end, and faired out to a circular section which gradually washed out aft the wings.

The pilot's seat was just behind the upper rear spar, and was fitted with t[illegible] usual "joystick" control, instrument board, etc.

Apart from the wing structure the machine was of conventional design, and illustrations are given which show the general arrangement.

Particular attention was paid to reducing head-resistance throughout, and a method of fairing circular tube struts by enclosing them in three-ply sheaths, steamed and die-pressed to form a single-piece fairing, was developed for this machine.



Three-quarter Rear View of P.V.2 as originally built.

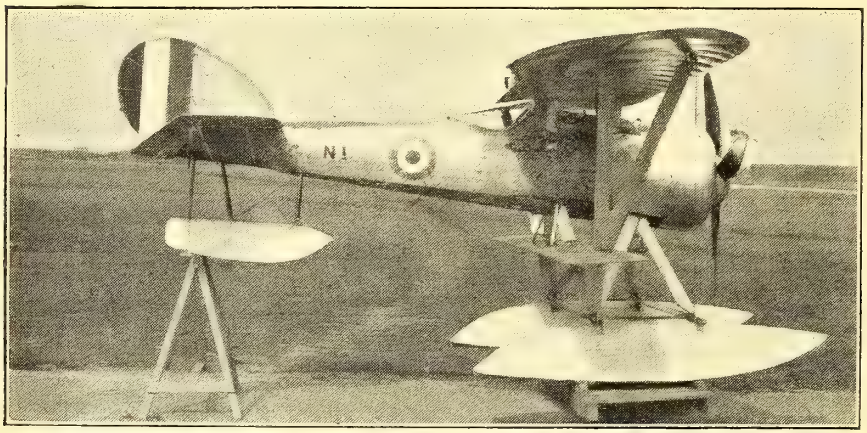
The machine was flown for the first time in June, 1916, giving promising results, but suffered from defective lateral control traced to the very long ailerons which extended nearly to the body, flexing when they were operated.

These were reduced to half their length and stiffened, which effected a complete cure.

Seaplane testing in these days was in its infancy, and the reported high speed of 83 knots was probably too high. Nevertheless the machine flew uncommonly well, and its landing speed, which certainly did not exceed the 38 knots given, was remarkable considering the loading of 9.5 lb. per sq. ft. This machine (N.1) was known as P.V.2, and was of the dimensions given in the attached specification :—

Specification.

Type of machine	Seaplane scout.
Name or type number of machine	P.V.2 (original).
Purpose for which intended	Zeppelin-strafing.
Span	top, 27 ft.; bottom, 19 ft.
Gap	3 ft. 6 in.
Overall length	22 ft.
Maximum height	8 ft. 4 in.
Chord	top, 5 ft. 6 in.; bottom, 2 ft. 6 in.
Total surface of wings	168 sq. ft.
Engine type and h.p.	Mono Gnôme 100 h.p.
Weight of machine empty	1,087 lb.
Disposable load apart from fuel	200 lb.
Total weight of machine loaded	1,590 lb.
Load per sq. ft.	9.5 lb.
Weight per h.p.	15.9 lb.
Tank capacity in gallons	petrol, 30; oil, 9.
Performance—	
Speed low down	*72 knots.
Landing speed	38 knots.
Climb—	
To 3,000 ft.	5 min.



P.V.2 as modified by raising the top plane to improve the Pilot's view.

A Modification.

By the time the machine was ready, however, the Davis gun had relapsed from favour—to reappear later on it is true, but not in this story. It was therefore decided to fit two Lewis guns on the wings and make a fighter seaplane of it. However, test pilots complained of the blanketing by the upper plane before them of the view when alighting, and the machine was therefore modified by raising the upper wing 1 ft. to the level of the pilot's eyes, and inserting a centre section of such a span as would keep the inter-wing struts in their original line. This alteration was greatly delayed by other work, but eventually the modified machine was tested in early 1917 and was greatly liked by those who flew it.

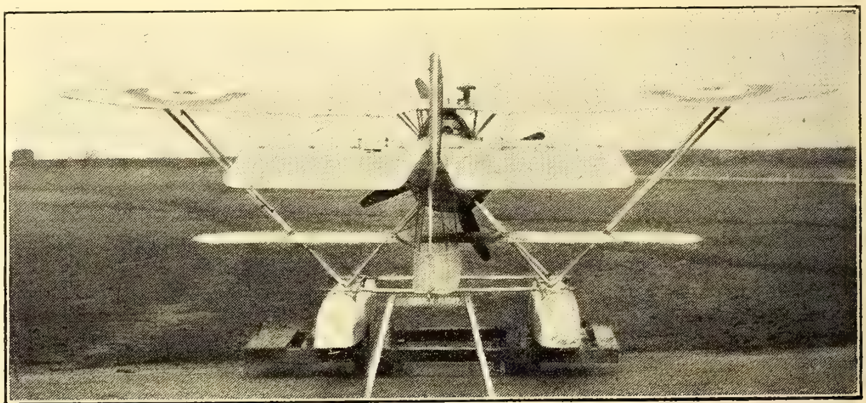
Specification.

Type of machine	Seaplane scout.
Name or type number of machine	P.V.2 (bis.).
Purpose for which intended	Fighting.
Span	top, 29 ft.; bottom, 19 ft.
Gap	4 ft. 6 in.
Overall length	22 ft.
Maximum height	9 ft. 4 in.
Chord	top, 5 ft. 6 in.; bottom, 2 ft. 9 in.
Total surface of wings	180 sq. ft.
Engine type and h.p.	Mono Gnôme, 100 h.p.
Weight of machine empty	1,211 lb.
Disposable load apart from fuel	192 lb.
Total weight of machine loaded	1,702 lb.
Load per sq. ft.	9.5 lb.
Weight per h.p.	17 lb.
Tank capacity in gallons	pertol, 30; oil, 9.
Performance—	
Speed low down	*72 knots.
Landing speed	38 knots.
Climb—	
To 3,000 ft.	6 min.
To 10,000 ft.	*35 min. 36 sec.

* Official test report figures. Actually realised a speed of 81 knots and a considerably better climb on later tests.

THE P.V.4.

Early in 1916 the Armament Section asked Port Victoria if they could design a two-seater fighter in which a gun could really be used. Sketch designs of a two-seat pusher



Rear View of P.V.2 with raised top plane. This view gives an excellent idea of the wing-bracing.

The Success of the R.34.

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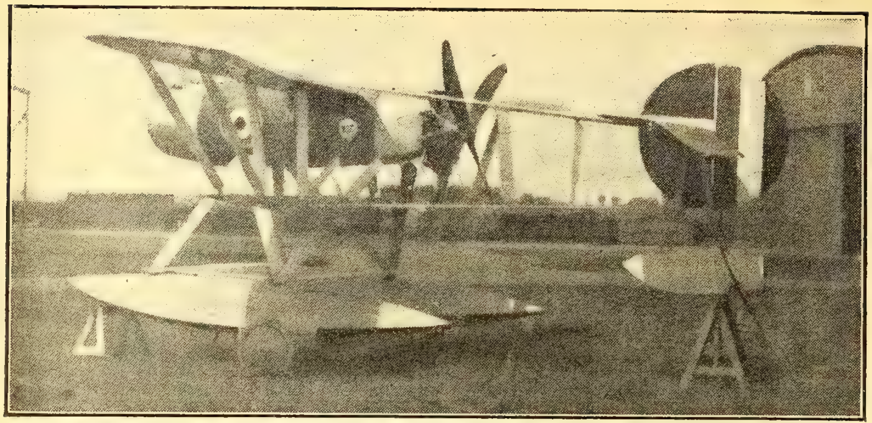


Half Side View of P.V.4 (110 h.p. Clerget). Note the Linton Hope Floats.

land machine with the 110 Le Rhône were prepared, and after some discussion were developed in detail. These designs never materialised—in that form—for they attracted the attention of certain higher authorities, who demanded a seaplane of somewhat similar arrangement for reconnaissance work, to carry wireless, a Lewis gun, and eight hours' fuel. An engine, known as the Smith "Static" radial, weighing 380 lb. and giving a guaranteed h.p. of 150 on a very low fuel and oil consumption, was promised for this purpose.

On the engine's promised performance it was estimated that the required load could just be carried within the limits of performance specified—40-80 knots and 5,000 ft. in 15 min. —and the machine known as P.V.4 was put in hand.

The number P.V.3 had been allotted to an Admiralty design which actually was built elsewhere, and the number remains unoccupied.

The whole structure of the machine was manufactured by the autumn of that year, but the promised engine never materialised. In the middle of 1917 the machine was put together with a 110 h.p. Clerget engine, the installation whereof led to a number of complications due to the extremely compact general arrangement of the machine and the much greater overall length of the Clerget engine, whose carburetter was in the midst of what should have been fuel tanks and whose airscrew hub was nearly a foot further aft than that of the intended engine.

As eventually put together for trial purposes the machine weighed 2,400 lb. with pilot, passenger, Lewis gun, and four hours' fuel. The span was 32 ft. and the total surface 220 sq. ft., and with a loading of nearly 11 lb. per sq. ft. and 22 lb. per h.p. the machine showed a top speed of about 70 knots and possessed a discernible climb—not a discreditable showing under the circumstances.

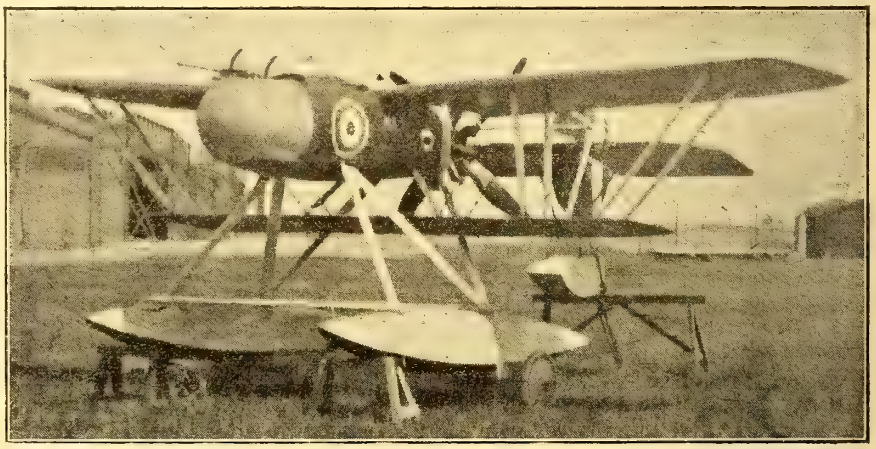
One very serious defect in the machine was due to the very close proximity of the airscrew to the tail plane, which, coupled with the change in the position of the centre of gravity, caused by the change of engines, made it impossible to balance the machine both with engine on and engine off. With a tail setting giving correct balance in the full blast of the propeller, the machine was tail-heavy with the engine off, and lost all longitudinal control below about 55 knots.

This could very easily have been remedied by redesign of the tail plane, but the machine was not thought sufficient importance for this alteration to be made.

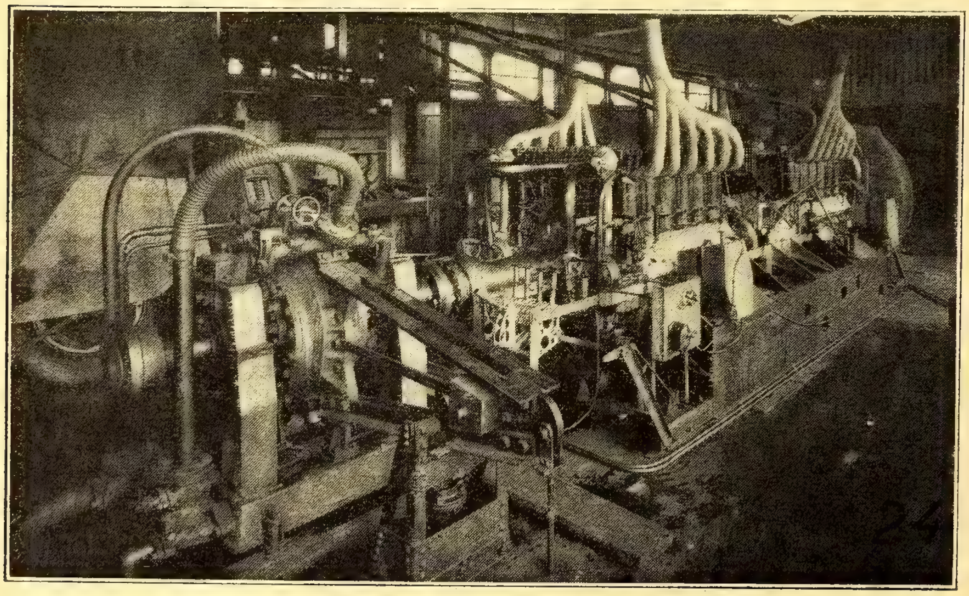
This characteristic led to her alightings being quite picturesque affairs, and incidentally afforded an excellent strength test of the experimental Linton Hope type floats with which she was fitted.

Though the type has never been perpetuated, it represents one of the most satisfactory general arrangements for a fighting and reconnaissance machine which has ever flown. Both seats are ahead of the wings, and the upper plane is on the nacelle top rails. The observer has an absolutely clear view over the whole hemisphere ahead and over a complete quarter-sphere to the rear above the wing level, and could use a gun freely over the whole range of vision. Given a reasonable weight per horse-power—*i.e.*, a modern power plant—and a very high performance could be obtained from the type.

(*To be continued.*)



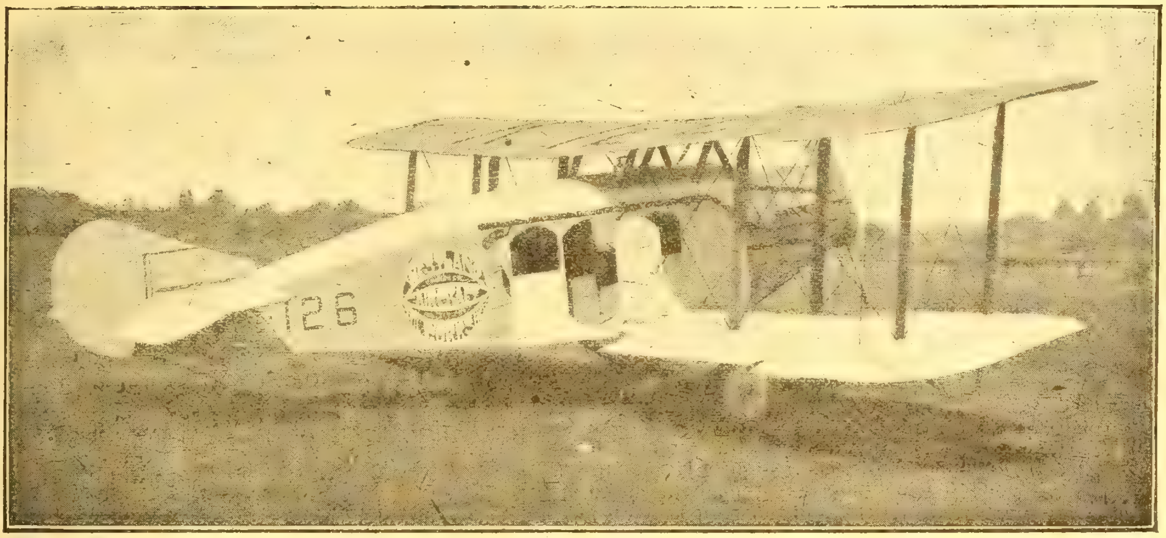
Three-quarter Front View of P.V.4. This gives an idea of the excellent view and field of fire from the front seat.



THE POWER UNIT OF THE LINKE-HOFFMANN BIPLANE.

The accompanying photograph represents the four 260 h.p. Mercédès engines, which form the power plant of the Linke-Hoffmann R.2 "Giant" aeroplane (described in THE AEROPLANE of July 30th, 1919) —together with the airscrew drive gear—assembled on the test bench. Particularly interesting is the brake to which the plant is coupled—a Heenan and Froude hydraulic dynamometer of British manufacture.

WESTLAND



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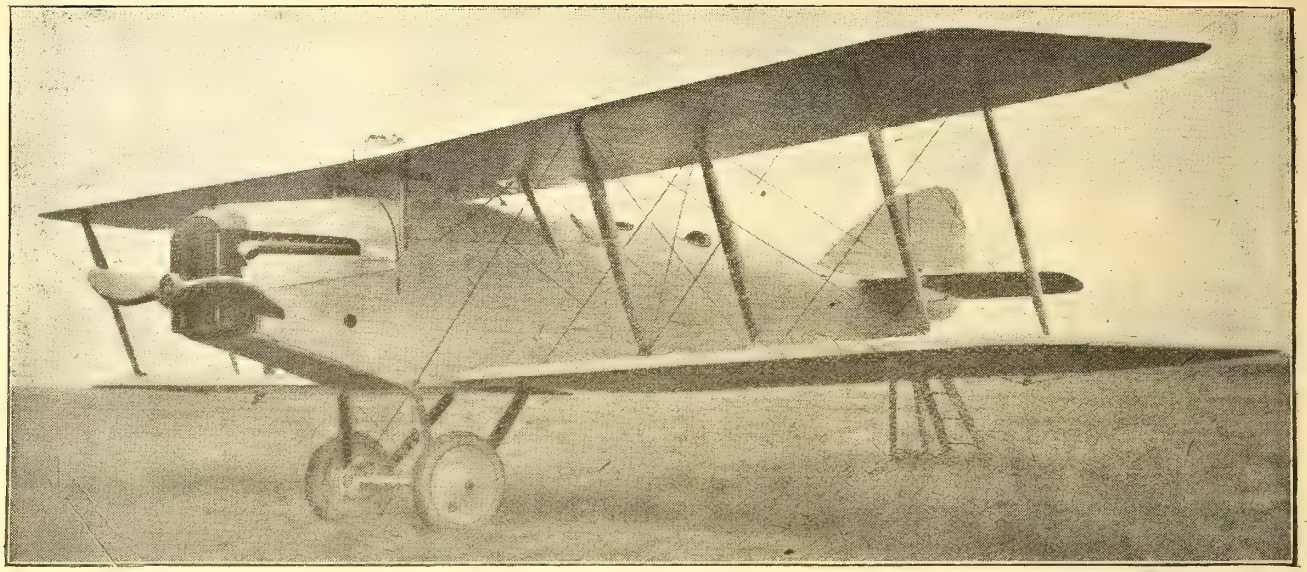


The Martinsyde A.S. Machine (275 h.p. "Falcon" Rolls-Royce engine) for the Australian flight.

The machine in which Capt. Howell will make his attempt to fly to Australia is, with a few exceptions, the standard Martinsyde type "A.1" especially designed for commercial purposes. The Australian machine has a slightly larger tank capacity than the standard, enabling it to remain in the air over 10 hours. The fitting of these tanks has not involved any structural alterations. The machine is a biplane fitted with a single Rolls-Royce Falcon III engine of 275 h.p. Its main dimensions are :—

Length overall	27 ft. 5¼ in.
Span (extreme)	43 ft. 4 in.
Chord	6 ft. 6 in.
Gap	5 ft. 6 in.
Tail plane	Adjustable
Area of top planes (all in, including C. section)	272 sq. ft.
Area of bottom planes (all in)	250 sq. ft.

In addition to the extra petrol, spare engine and machine parts, tool kits, etc., weighing about 1,000 lb. are carried.

The machine carried this weight very comfortably, and so loaded the most economical cruising speed is the high one of 100 miles per hour. The machine is remarkable in that although it has a very high maximum speed—130 m.p.h. (faster than many fighting scouts in 1918)—it has the very low landing speed of 40 m.p.h , enabling it to land in a very small confined space.

These two factors, high cruising speed and low landing speed, are of tremendous importance in a journey of this kind, the high cruising speed cutting down the flying time between stops, and the low landing speed facilitating landing on the many indifferent aerodromes en route.

Faith is not being pinned entirely to these qualities. Even a helicopter cannot land on mangrove swamps or volcanoes. Capt. Howell has spent some time in the East Indies, and the difficulties which are confirmed by General Borton's report are not unknown to him.

Floats of a special design have been constructed, and with but very little labour the land carriage can be removed and the floats attached. These floats have been tested and dispatched to Calcutta, where the change will be made.

The machine is equally efficient with floats as with a land carriage, and on test it was found to maintain the normal cruising speed. Capt. Howell does not place much reliance in instruments. In the course of some 2,000 hours' flying under various conditions, and on many types ranging from scouts to twin-engined bombers, he has tried out many and various instruments, and is convinced that the minimum number is the best. With the exception of the main compass, which is of special pattern, only standard instruments are fitted. The pilot will take his own navigating instruments.

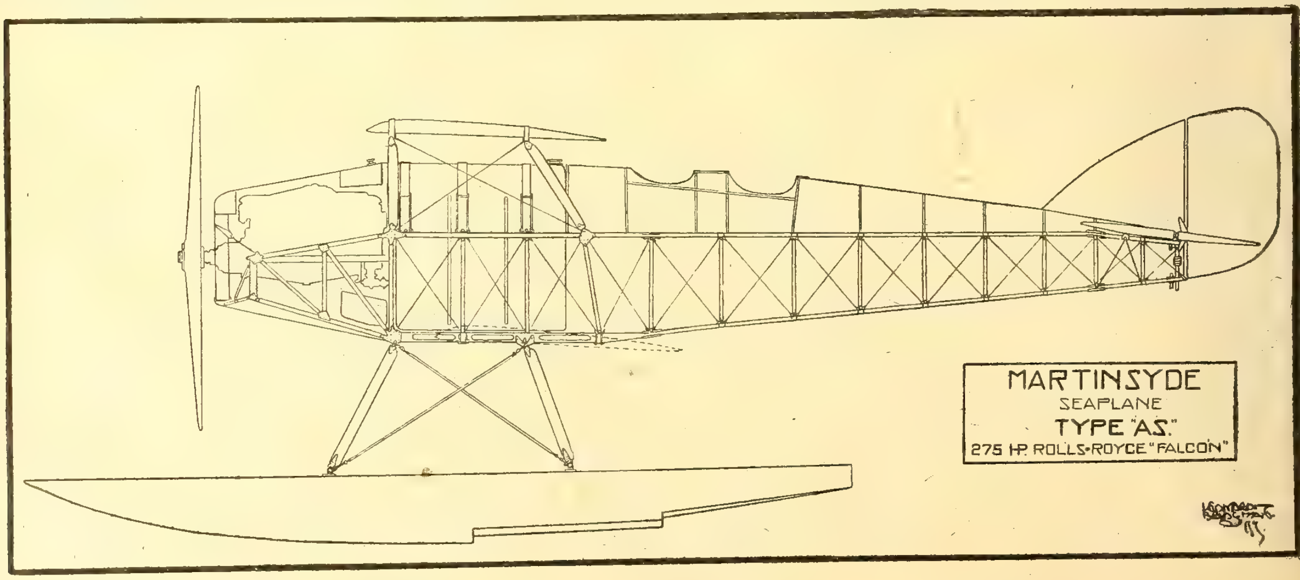
The fuselage of the machine is deep in section and the pilot and mechanic have plenty of protection. As, however, this machine is meant for hard work no attempt has been made to fit cabins as on the "A.1" passenger type.

An airscrew is among the spares carried on the machine, and, with those distributed to the various stopping places, should enable any but the biggest repairs to be accomplished.

AN AERONAUTICAL MOLESWORTH.

The review of Mr. A. W. Judge's "Handbook of Modern Aeronautics" published in THE AEROPLANE of Oct. 22nd has apparently given the impression in some quarters that the book as a whole is some five years out of date.

The reviewer wishes to put it on record that this applies solely to the sections in regard to which the particular criticism was made, that is to such aerodynamic statistics as the properties of aerofoils as determined by model tests, and to strength calculations and the like, which actually form only a very small proportion of the whole.—W. H. S.



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During the past three months the "AEROPLANE" has offered to yearly subscribers the right to purchase copies of "FLYING COLOURS," McCudden's "FIVE YEARS IN THE R.F.C.," Richthofen's "RED AIR FIGHTER," and Gill's "THE AERIAL ARM" at half-price.

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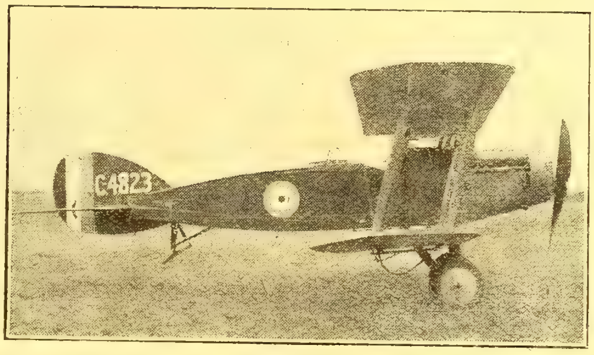

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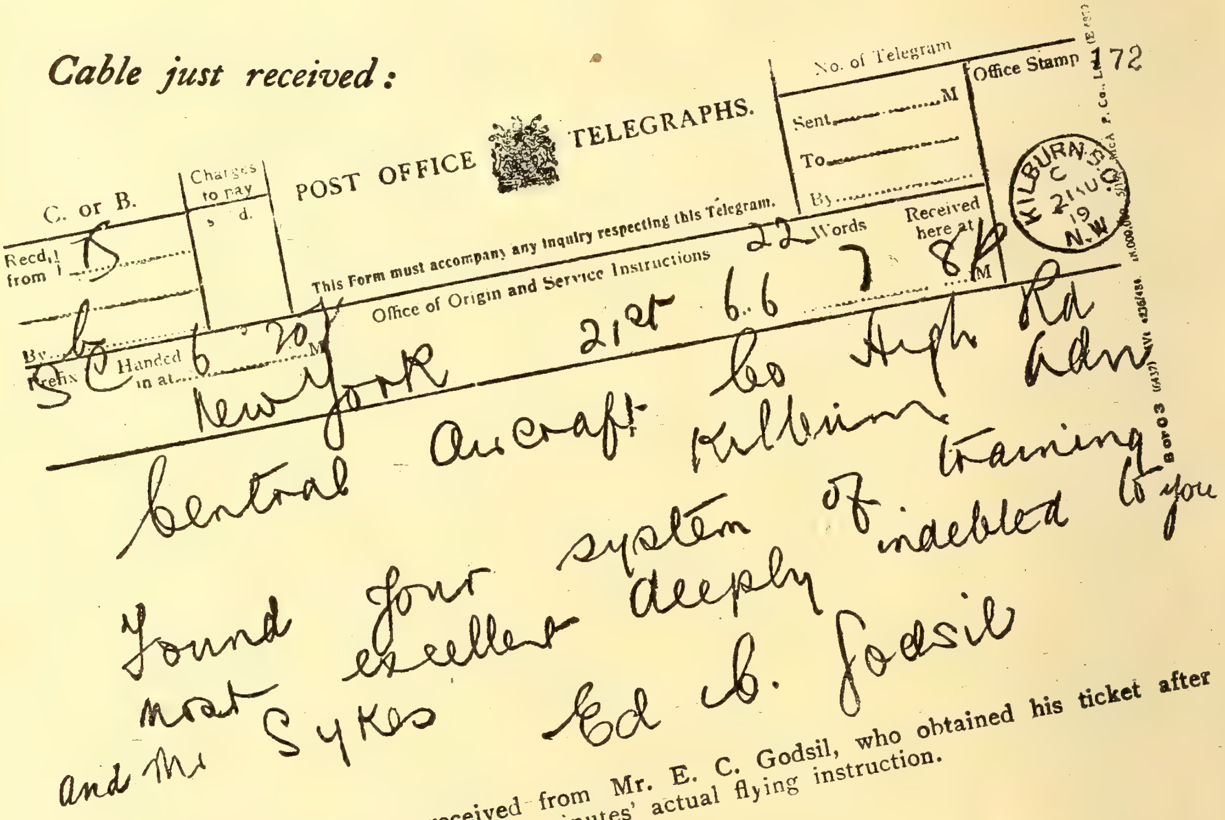

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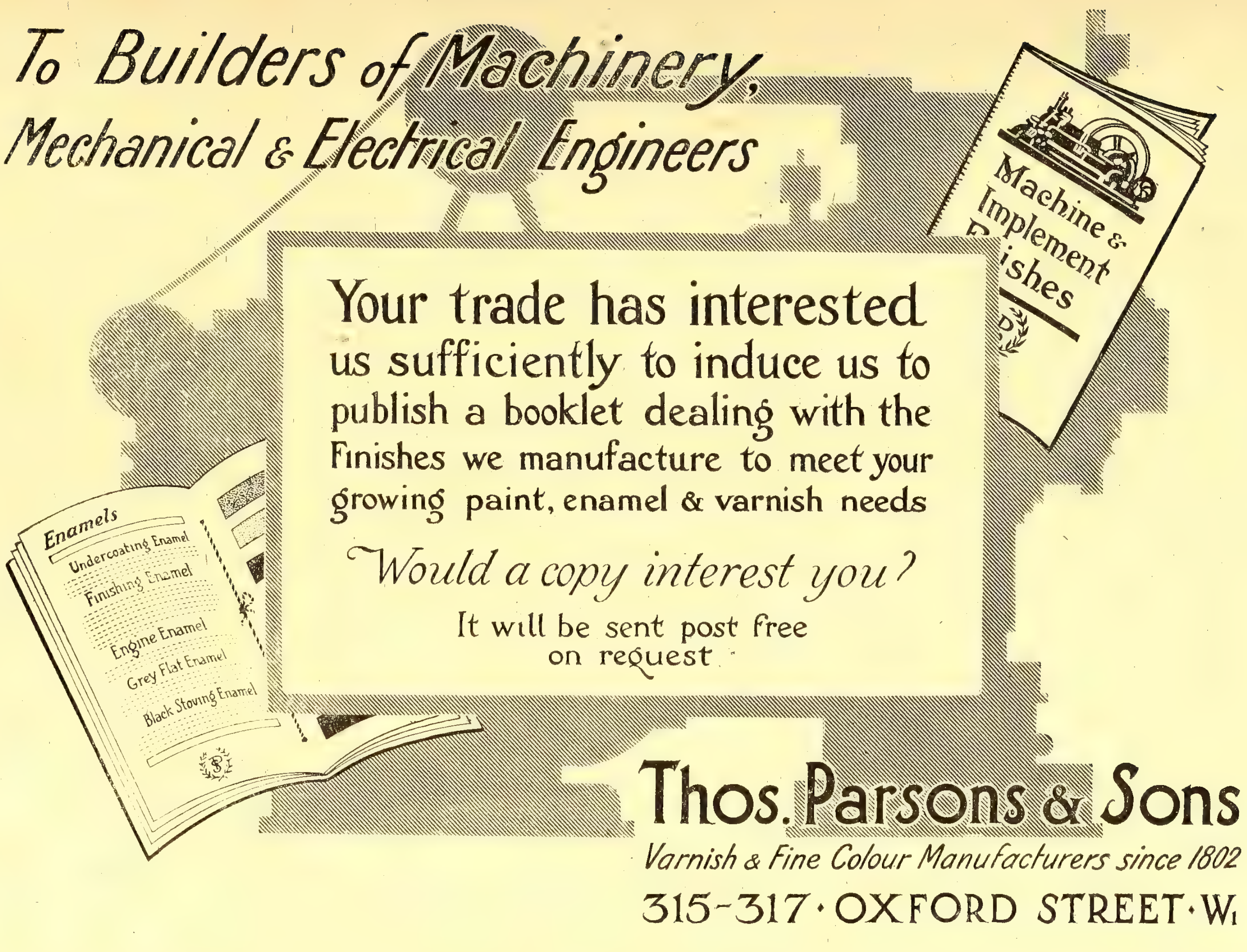

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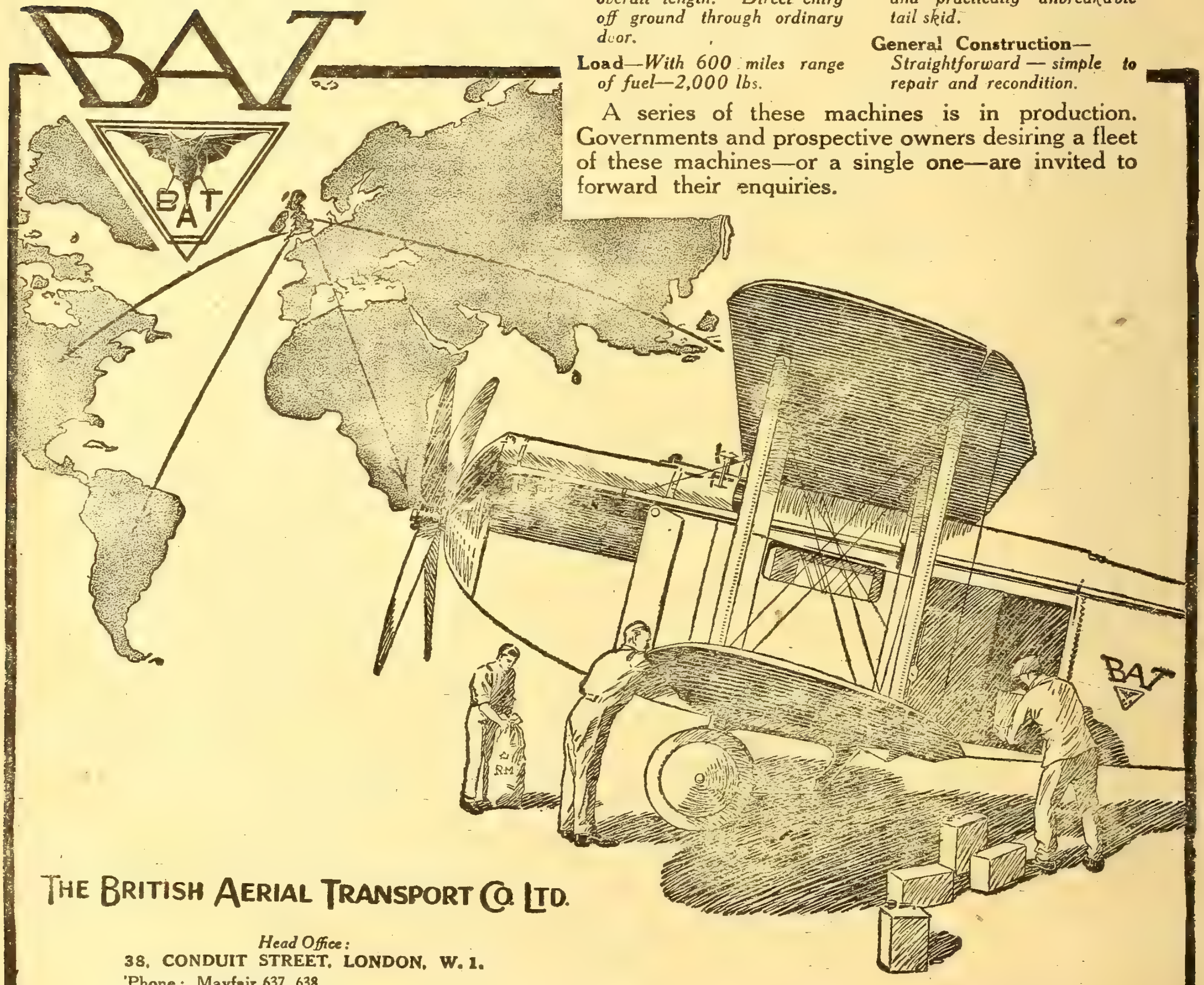

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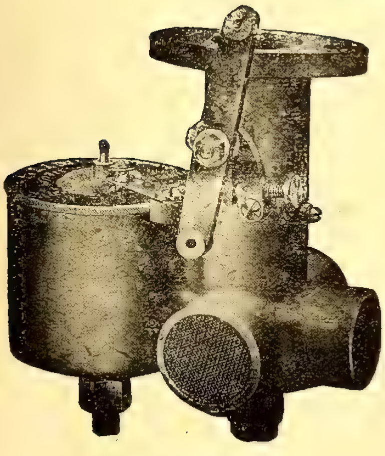

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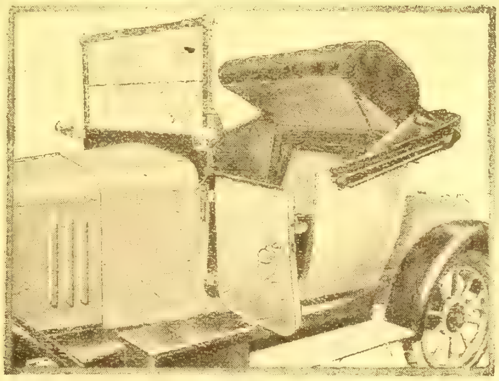

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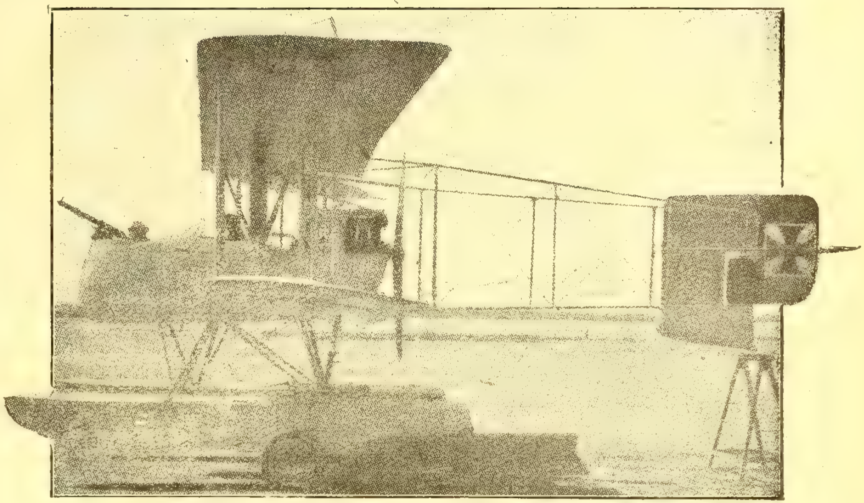
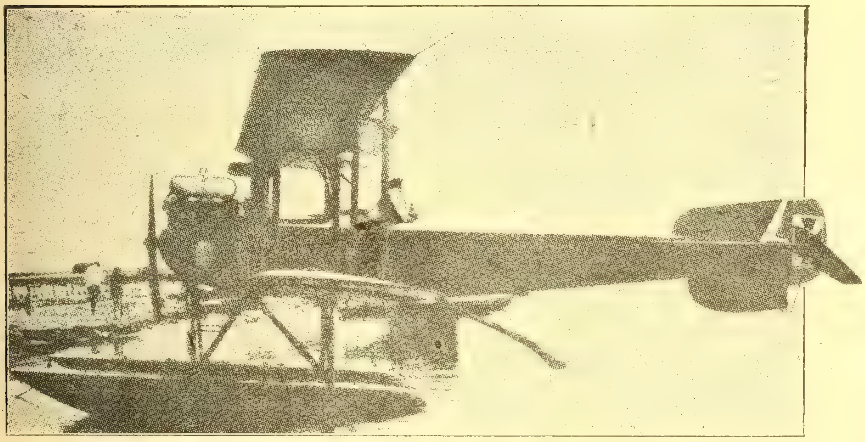
THE GERMAN FRIEDRICHSHAFEN SEAPLANES.

By ERIK HILDESHEIM.

Formed in 1912 as a branch of the Zeppelin Airship Building Co. at Bodensee, the Friedrichshafen Flugzeugbau ("F.F.") was the first German aircraft works devoted solely to seaplanes, and was during the war one of the two chief contractors to the navy, the other one being the Brandenburg Company, the Sablatnig and the Gotha firms coming next.

F.F. seaplanes were built under licence also by the L.F.G., Sablatnig, and Travemünde works. In all, 20 different models were produced—viz., the F.F. Nos. 29, 31, 33, 33B, 33E, 33F, 33H, 33J, 33S, 33L, 34, 35, 39C, 40, 41A, 43, 44, 48, 49C, 64—two of which were pushers, sixteen being ordinary tractors, and two twin-engined seaplanes developed from the Friedrichshafen land model.

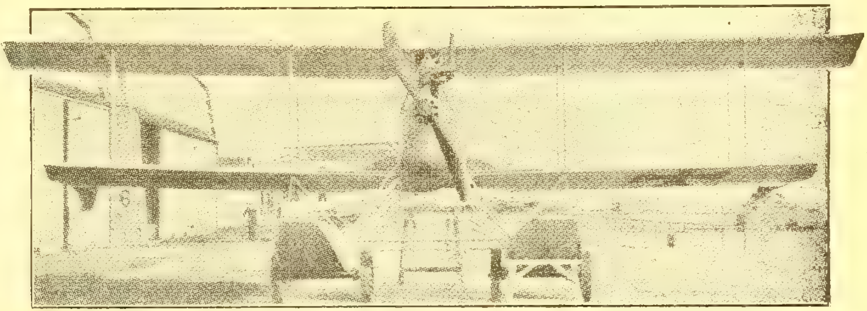

The F.F.31 Pusher Seaplane (160 h.p. Maybach engine).


The F.F.33 Bombing Seaplane (120 h.p. Mercédès engine).

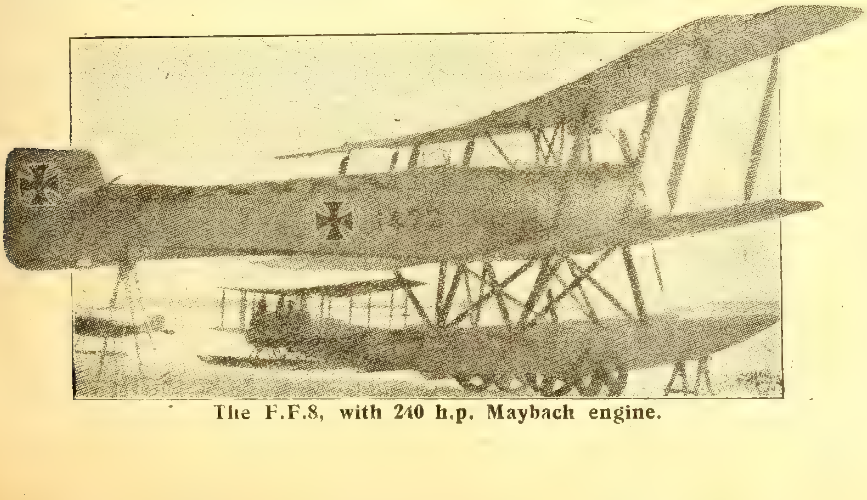
The first seaplane, F.F.29, equipped with a 120-h.p. Mercédès motor and intended for bombing, was still of the pre-war type, with the observer in the front cockpit, with a gravity half-hour's flight emergency tank hanging in the cabane, and with the radiator above and supported from the cylinders. F.F.33 was an identical seaplane except for the floats, which applies again to the 33B version.

In these machines the boat-form bows were abandoned and a stern with flared bottom was adopted. The pilot and observer changed places, and the latter was provided with a gunring, as the seaplanes were used for scouting. The "Hazet" type strip radiator fitted on the side was employed and a 160-h.p. Maybach engine installed.

33E is again very similar to the above-mentioned models, being equipped with a 150-h.p. Benz engine and having a front radiator mounted at the leading edge of the top plane. The floats had by now increased so much in length that during the production of this seaplane the tail float could be abandoned. 33E was provided with wireless and employed either for bombing or scouting, or for both services, and was the first Friedrichshafen aircraft with the characteristic twin tail fin (both above and below the body) and balanced rudder.


The F.F.33F, a Fighting Scout.

33F is again a development of the 33 type with reduced dimensions to improve controllability, and was the first German naval fighting scout. A further improvement was the 33H variation with shortened body and redesigned ailerons and floats, aiming at reduced head resistance. Yet the main change was a new cabane and the provision of load struts between the floats, duplicating the cable wiring so that the gunner could fire between the screw circle and the inner set of struts without fearing a breakage if the cable wiring here should be shot through.


The F.F.8, with 240 h.p. Maybach engine.

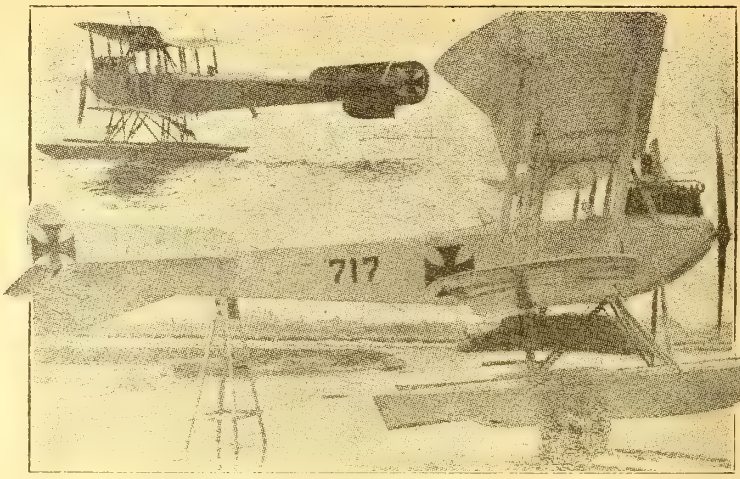
The 33J was the direct successor to the 33E, especially seaworthy and equipped with a 150 h.p. Benz motor and wireless for scouting. It was employed on board the raider cruiser "Wolff" and was superseded by 200 h.p. seaplanes from military points of view only, being maintained as the chief German naval training machine, as the model 33S.

For scouting it developed into the type 39C of increased dimensions to suit the new 200 h.p. Benz power plant, the top planes being further provided with an increased stagger.

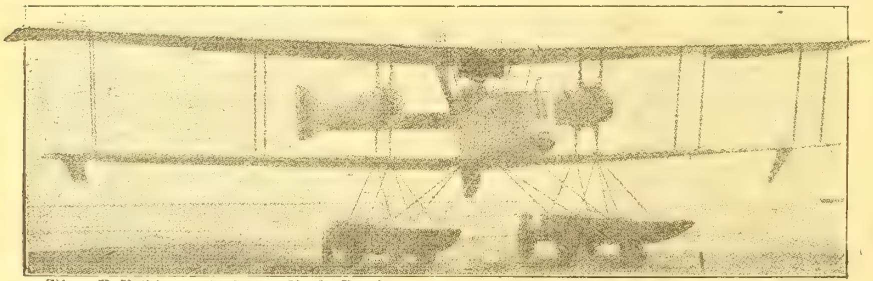
In time this seaplane was improved as the F.F.49C model of pronounced Hunnish aspect from the efforts of paying high attention to seaworthiness. This type was in service for two years up to the end of the war and satisfied German demands of seaplane performance with a speed of 140 kilometres per hour and a climb to 6,000 ft. in 25 to 30 min., as the seaplane would most often fly at low heights.

It is quoted that this model often rescued and flew with the crews of other seaplanes, and that the crew of a Friedrichshafen 49C patrol seaplane with wireless was rescued after a week's drifting at sea, when all hopes had long been given up.

The 49B model was identical but for the adoption of the front observer cockpit with aiming device, as the model was turned out for bomb dropping.



The F.F. Reconnaissance Seaplane, Type F.F.33E. (150 h.p. Benz engine).



The F.F.31, a twin-bodied Pusher Seaplane, with 240 h.p. Maybach engine.

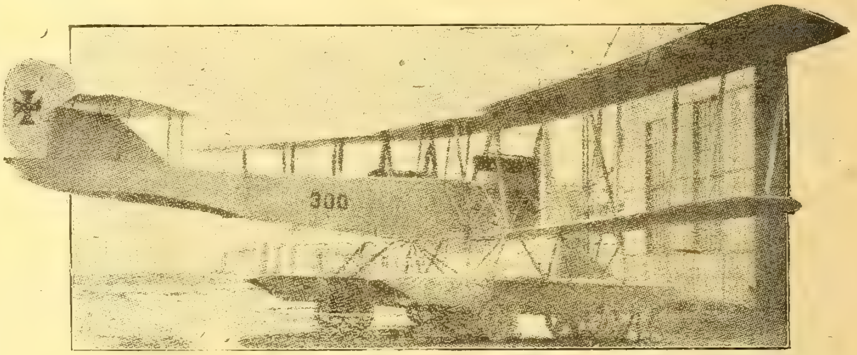
F.F.33L was a further development of the H version, equipped with a 150-h.p. either Benz or Mercédès motor, and was used for fighting, representing a compromise between performance and seaworthiness.

The F.F.43 was produced as a single-seater fighter, its chief feature being that the eyes of the pilot were level with the main top plane spar to afford a good view above and below the top planes.

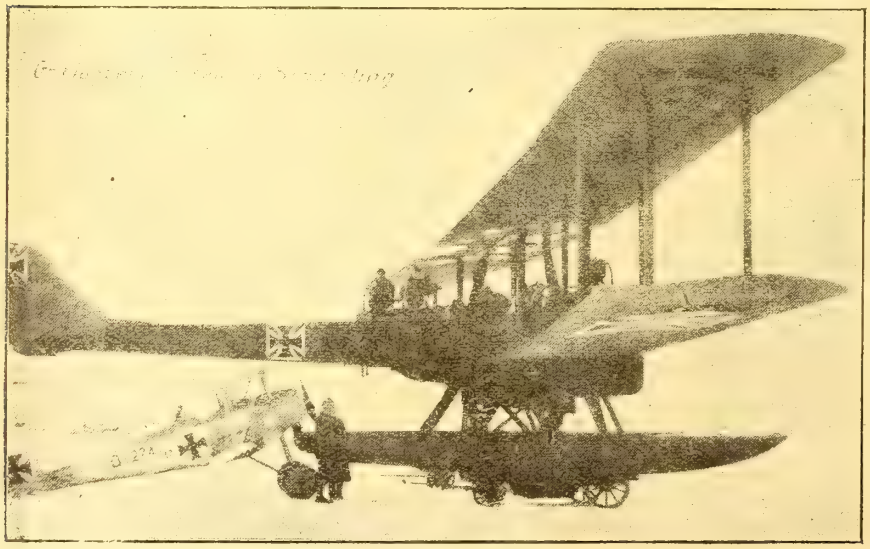
The F.F.48 model was turned out as a two-seater fighting seaplane for long flights, fuel being carried for 5½ hours. A 240-h.p. Maybach engine and one fixed and one turnable machine-gun were installed, forward firing of the latter between the screw circle and the inner strut sets being possible.

The second seaplane model to be turned out by the Friedrichshafen works was a pusher biplane with 160-h.p. Maybach motor, the F.F.31 model, bearing much resemblance to the Vickers gun-'bus, with its fixed tail fin. Here, too, the gunner-observer with his bombs sat in front, as the model was primarily intended for patrolling. Once again later another pusher biplane was brought out for the same object, being the F.F.34, equipped with a 240-h.p. Maybach engine and wireless, which was of the empty twin-fuselage design made of three-ply wood. An experimental model was the F.F.40, with twin tractor-screw drive by a 240-h.p. Maybach motor, which was satisfactory but for the excessive weight of the transmission gears.

Another experimental Friedrichshafen seaplane was the F.F.44, with single screw driven by the same power plant through a spur-wheel reduction gear.



Twin-engined Seaplane. Model F.F.35 (two 150 h.p. Mercédès engines).



A Friedrichshafen twin-engine Torpedo Seaplane and the captured Nieuport which acted as escort.

The twin 150 h.p. Mercédès-engined F.F.35 model was the first two-motored Friedrichshafen G class seaplane, the engines being mounted in A struts on the lower planes, independent of the interplane strutting. To protect the tail unit well from the sea the fixed plane, as well as rudder and elevator, were raised above the fuselage end, the latter being made of three-plywood with a vee-bottom to act as float support and thus reduce shock stresses on the body in rough sea. Another feature was that in this aircraft all main plane fuselage and float fittings were machined from solid steel forgings.

From the experience of the land-going F.F.G. class bombers the naval authorities ordered special torpedo-carriers, being mainly the F.F.41A model equipped with two 150 h.p. Benz motors mounted in V struts. Experience showed this twin-engined seaplane to be seaworthy.

To provide the scouting seaplanes with better facilities for defence the F.F.59C model was provided with in-

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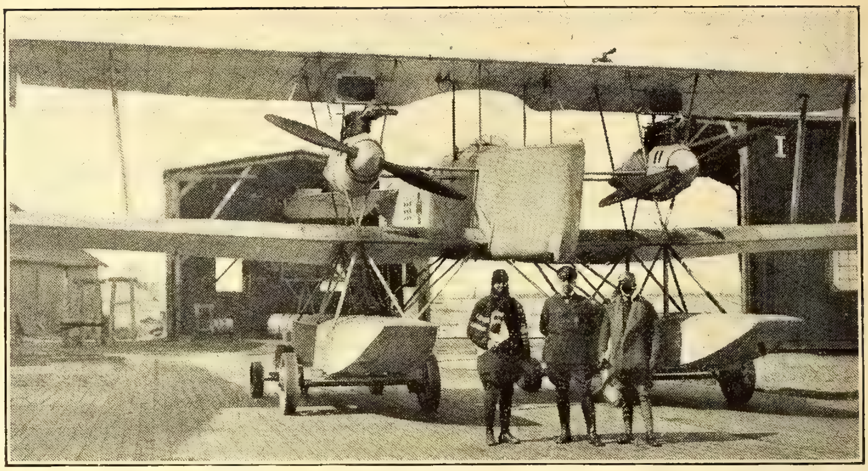
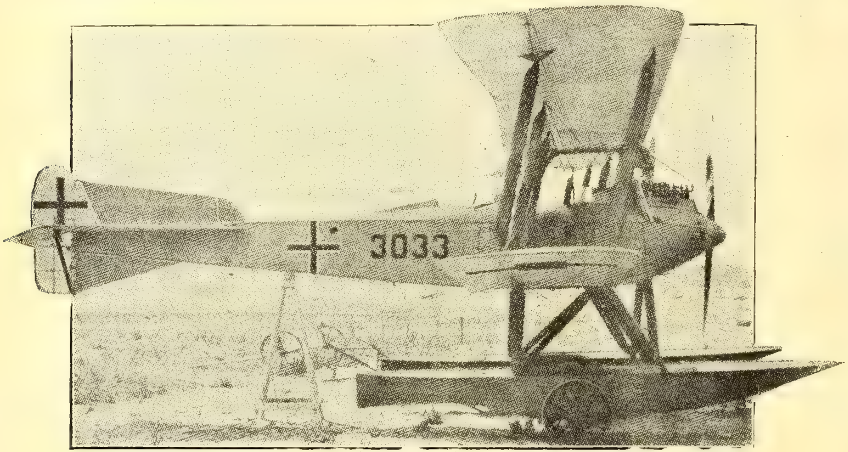


The F.F. Model 41A Torpedo-carrier (two 150 h.p. Benz engines).

creased interior strut distance, leaving out the wiring for better front firing of the rear gun. The last Friedrichshafen seaplane type during the war, the F.F.64, was designed on the results obtained with the "Wolff" air-raider. This seaplane was equipped with a 160 h.p. Mercédès motor, and for hoisting on board ships and for easy complete dismantling was made to fold its wings.

This record of achievement on the part of a single firm would seem to show—or rather emphatically to confirm what is otherwise known—that the German authorities assessed the seaplane more nearly at its true value than did the British.

The Friedrichshafen seaplanes performed extremely well in service in the North Sea, and were generally reported to be faster than the British seaplanes which were in service against them.



The F.F. Type 33J (150 h.p. Benz) used on the raider "Wolff."

Why this should have been the case is not particularly obvious from the illustrations given herewith, since the machines show no striking features of design.

They are generally of clean design, and their floats appear to have been designed with an eye to low resistance, but it seems probable that in the main they owed their advantage over their opponents to the fact that the Germans did not load their seaplanes up with all sorts of gadgets as did the R.N.A.S., but confined them to their designed load, and that the German authorities were as quick as possible in putting improved types into service.

At least the German naval authorities seem to have had a fairly clear idea of what types of machines were required for war purposes, and to have persisted in the development and improvement of machines of those various types—a policy in rather marked contrast to that of their British rivals.

Finally, the main figures are compiled of a few of the out-standing Friedrichshafen naval aircraft :—

Type.	Max. Length.	Max. Span.	Height without trolley.	Distance b'tween Floats	Float Volume.	Horizontal Speed	Speed when leaving water.	Climb.	Flight Duration.	Weight empty without water.	Useful Load.
F.F. 33J	10.3 m	16.7 m.	3.7 m	3.77 m	1 750 litres	115-125 km.	80 km.	1,500 m. in 25 min.	5 hrs.	1,045 kilos	540 kilos
F.F.33L	8 95 ,,	13 2 ,,	4 ,,	2.82 ,,	1,400 ,,	130-140 ,,	85 ,,	2,000 m. in 30 min.	3½ ,,	940 ,,	475 ,,
F.F.41A	13.7 ,,	22 ,,	4.65 ,,	4.5 ,,	3,850 ,,	115-125 ,,	85 ,,	1,000 m. in 25 min.	5 ,,	2,300 ,,	1,370 ,,
F.F.49C	11.6 ,,	16 7 ,,	4 ,,	3.97 ,,	2 300 ,,	130-140 ,,	80 ,,	2,000 m. in 30 min.	5½ ,,	1,485 ,,	650 ,,

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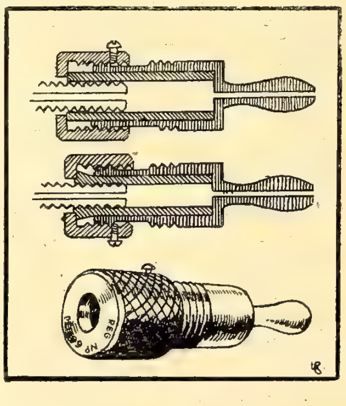

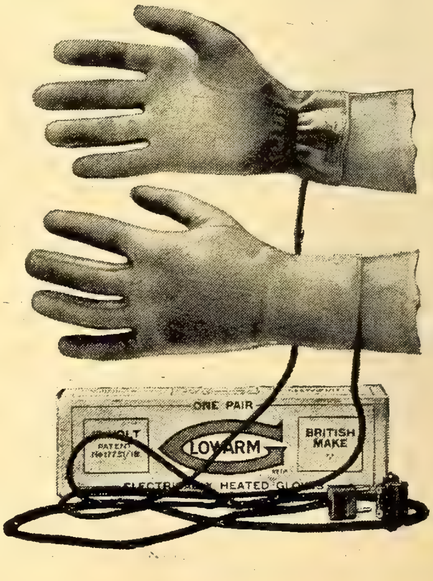

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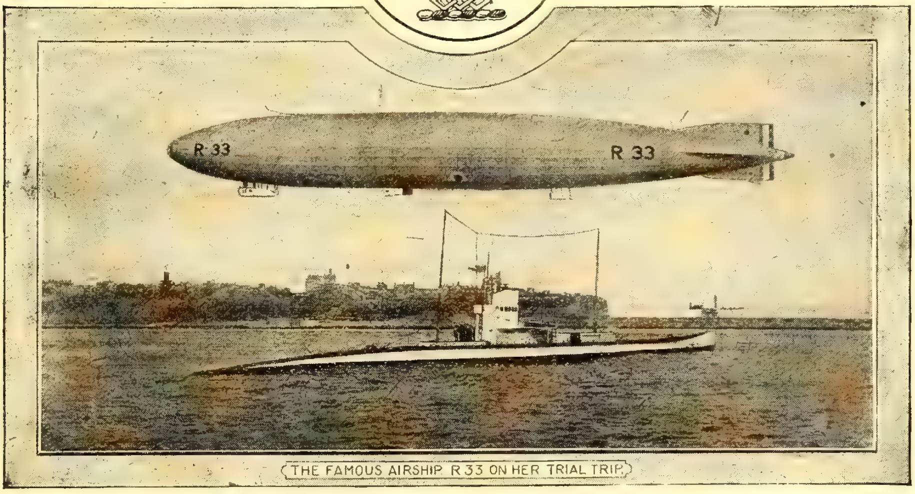

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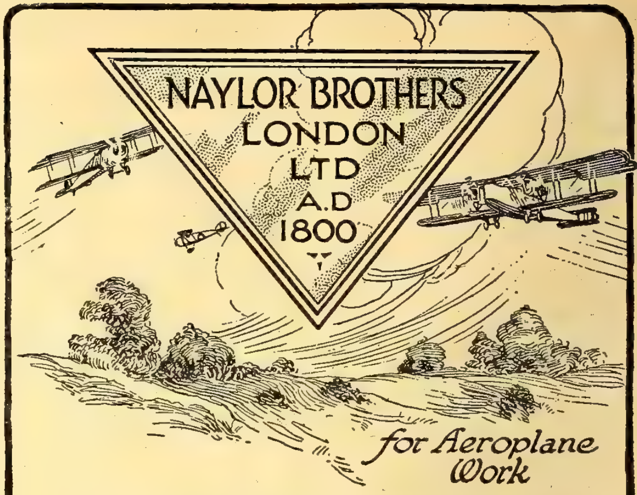

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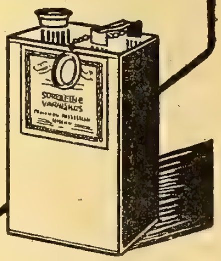

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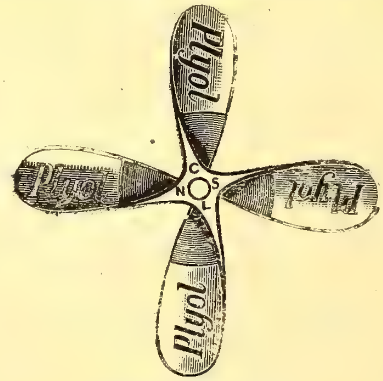

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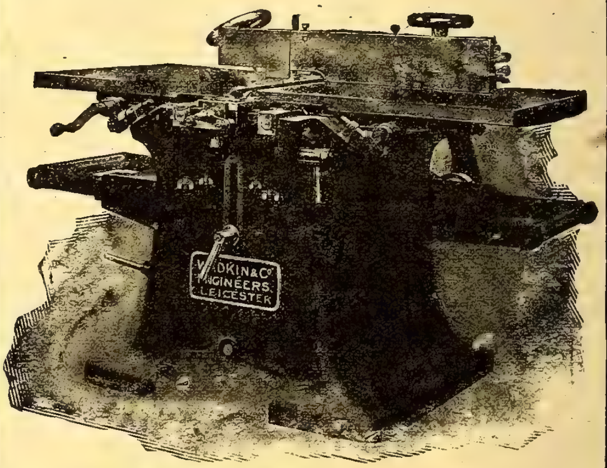

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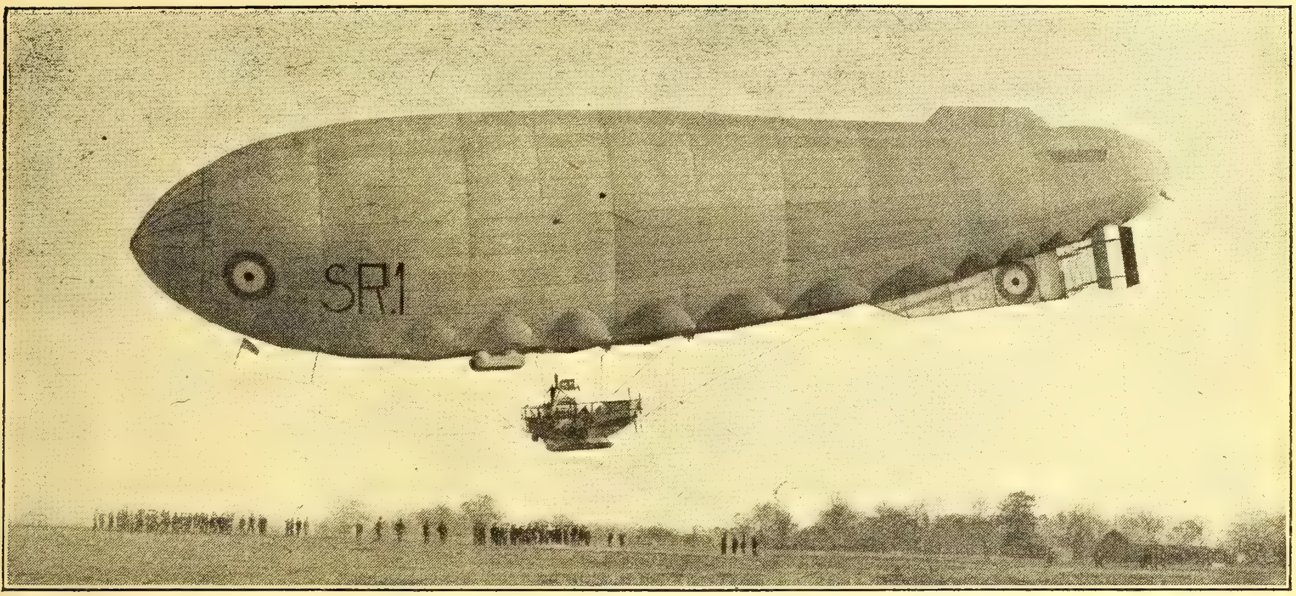


The Italian-built semi-rigid S.R.1 acquired by the Admiralty.

As is well known to anybody who is interested even in the smallest degree in airships, this form of aircraft is of three distinct types—(1) the rigid, (2) the semi-rigid, (3) the non-rigid. These three types all have their separate characteristics and differ very radically from each other.

The rigid, of which the German Zeppelin has been the leading example and which has been developed to a high state of efficiency in this country, consists of a rigid framework composed of wood, duralumin, or some other suitable material, which contains a number of chambers or balloons filled with gas. The semi-rigid is an adaptation of a non-rigid envelope which is reinforced by the addition of a rigid keel from which the principal weights, such as engines and cars, are suspended, and its advantage over the non-rigid comprises its resistance to buckling in the event of the envelope losing pressure.

The non-rigid airship has its weights suspended from the envelope itself and consequently requires an internal pressure slightly in excess of the pressure of the air without to maintain its shape.

Since the early days of British airships, production has been confined entirely to the first and third of these types. The rigid has been exploited for ships of a huge size, while for small ships whose duration of flight could be limited the non-rigid type was selected as being simple in construction and therefore quick and inexpensive to build.

The semi-rigid has been neglected entirely since the days of the Army airships "Beta" and "Gamma," which, though not strictly speaking of this design, employed a long boom in which the car and engines were incorporated.

The Italians, on the other hand, throughout the whole period in which they have been concerned with airships, have relied almost entirely on the semi-rigid principle. Airships of various sizes and different models have been constructed, ranging from the D.E. type of 92,000 cubic feet capacity to the Forlanini of 635,400 cubic feet. The Italians, it must be confessed, appear to be very satisfied with their results, and do not apparently possess any intention of experimenting with the other types, with the possible exception of the rigid.

In the spring of 1918 the Naval authorities in this country came to the conclusion that, however satisfied they might be with the airships which they had built and were building, it would be wise for experimental reasons to acquire, if possible, one of the latest types of semi-rigid ships as employed by the Italians.

With this object in view a party of airship officers visited Italy to inspect the various ships in commission and to report on their suitability for work with the Naval airship squadrons.

On the return of this party it was decided that a ship of the "M" class should be purchased, and three officers and an airship crew were sent over in the late summer of the same year to be present while the ship was inflated and rigged.

This airship was given the number of S.R.1 (semi-rigid 1) and was finally completed about the end of September.

The M class of airship is one of the most successful which has been designed by the Italians and has achieved everything that was expected of it. For several reasons, however, apart from experimental purposes, it is not likely to be of any value to our airship service, as, owing to its design, its speed is, comparatively speaking, slow, and in endurance is not to be compared with the "North Sea," the nearest airship to it in size which we possess.

Its design and construction is so totally different to any airship with which we in this country are familiar that a few words of description will probably prove of considerable interest.

The Italian airships, although all are of semi-rigid design, follow two distinct lines of thought in that the keel, which reinforces a non-rigid envelope, is constructed on two entirely different principles.

In the first system the keel is completely rigid, either enclosed within the envelope or external to it, and assists in maintaining the shape of the envelope.

In the second system the keel is hinged or is in effect a series of rigid links and comparable to the chain employed in cycles. The shape of the ship is therefore maintained by envelope pressure and not by the keel, but the latter, owing to its resistance to compression, enables a lower pressure to be maintained than is possible in the purely non-rigid type of airship.

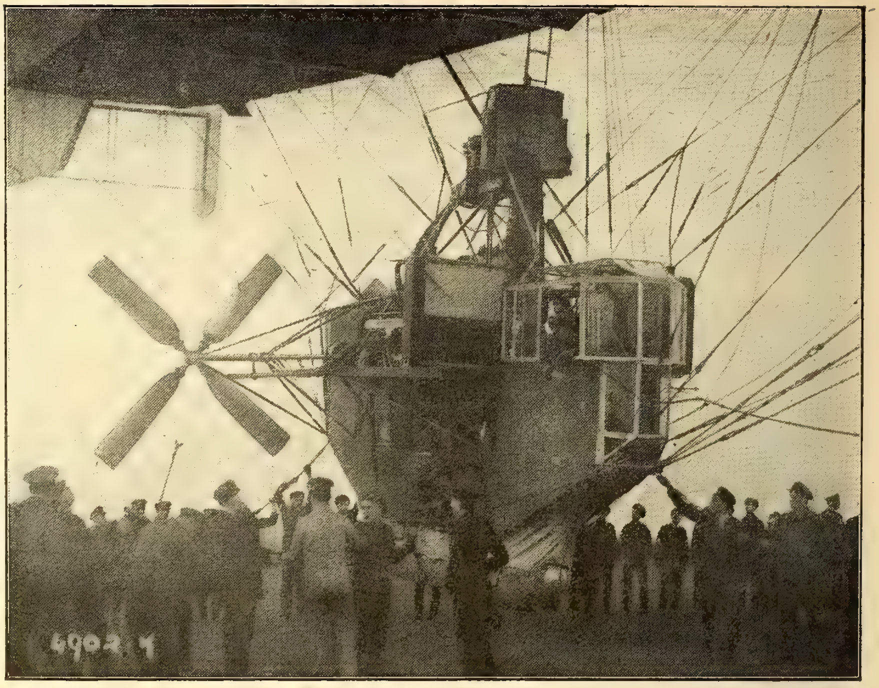
S.R.1 is designed in accordance with the second of these systems.

The keel is composed of high-tensile steel tubing built up into triangular girder sections, and all connections are universal joints provided with lubricated ball joints which leave it quite free to bend in a vertical plane. This keel is carried throughout the entire length of the ship and is enclosed within the envelope.

It is attached by means of flexible cables secured to the cross girders, which, meeting in pairs in the form of inverted Vs, pass through the ballonet through gastight sleeves to a point about two-thirds of the envelope's height. Here these wires again separate and the two ends are attached to canvas bands suspended from each side of the envelope near the top. Parabolic wires are also provided, sewn to the envelope, which are connected at each end to the side girder lengths of the keel. The keel is covered underneath by a canvas covering sewn to the envelope and laced together at the centre line.

The envelope has six gas compartments and is of a total volume of 450,000 cubic feet. The gas compartments have diaphragms of varnished silk, while the envelope itself is built of two-ply fabric covered with a thin coat of aluminium dope. One single ballonet of approximately 200,000 cubic feet is fitted to the bottom of the envelope and extends throughout its entire length. Fourteen air-valves, fitted with opening and closing controls, are situated along the bottom of the envelope. Air is admitted through a shutter type of valve situated in the nose. Each gas compartment has two valves, making a total of 12, and a ripping patch on the top.

The M ship is fitted with a top and bottom stabilising fin



The Car of S.R.1.

composed of girder work covered with canvas, and the elevators and rudders are constructed on the box principle, as is universally adopted in all Italian airships.

The car is by no means commodious, and for flights of long duration involves the crew in great discomfort. The frame is made entirely of high-tensile steel tubing, the joints being formed of nickel steel, and the flooring is of wood. In the car are carried, in addition to the machinery, all the petrol, oil, and water ballast required for flight. Bombs, machine-guns, and ammunition are also disposed in the cars, so that it can be readily understood that a very great weight is concentrated in one place, and that a large number of suspensions are required to distribute the load throughout the length of the envelope. These have a tendency to decrease the speed of the ship, but owing to the prevailing winds being light, and for other reasons, speed is considered not to be of paramount importance in the Italian Service.

The forward portion of the car is utilised as a navigating compartment, and here are placed the various instruments, and the controls are accordingly led to this end. The engines—in this case two 200-h.p. Maybachs—are situated amidships on the port and starboard sides, each driving a single propeller astern of the car through a system of gearing and a long tubular shaft.

The transmission, according to British ideas, appears to be very heavy and cumbersome, the drive being taken through these long shafts, which introduce universal joints and clutches, which are necessary as the propellers are fitted with adjustable blades for giving variable speed and reverse. The tendency in more recent ships is to dispense with this system and to employ a direct drive with propellers of a fixed pitch.

The car is suspended by means of 16 cables on either side, which, with the exception of the foremost one, are all attached to the side girders of the keel. These are supported in turn by the parabolic wires in the envelope before-mentioned.

In conclusion a summary of the leading dimensions will give some idea of the size of the ship. The same dimensions are also included for the North Sea airship, which will enable interesting comparisons to be made.

	M Type.		North Sea.
Length	290 ft.	...	262 ft.
Overall width	58 ft.	...	56 ft. 9 in.
Overall height	72 ft.	...	69 ft. 3 in.
Disposable lift	7,700 lb.	...	8.500 lb.
Maximum speed	46.5 m.p.h.	...	57.5 m.p.h.
Capacity	450,000 cu. ft.	...	360,000 cu. ft.

S.R.1 was flown over to England by a British crew shortly before the signing of the Armistice. During the flight very bad weather was experienced, and, as no shed was available in France in which she could be housed, she had to be moored out in the open whenever it was necessary to descend to replenish fuel.

Fortunately, no disaster was experienced, and the ship arrived finally at her destination, Pulham, in Norfolk.

It escorted the German submarines into Harwich Harbour on the occasion of their surrender, and was seen fairly recently over London when she flew over the metropolis to assist in the Victory Loan. Her peculiar appearance on that occasion caused considerable interest and curiosity. This was not surprising, as no airship like her had been seen over this country before.

AN IMPRESSIVE PUBLICATION.

A. V. Roe and Co., Ltd., who may safely claim to be the pioneers of British aviation, have now attained to the dignity of issuing a large and elaborate catalogue of their productions. It is produced with a magnificence which would not be unworthy of the motor trade at its most prosperous period, and the style of the illustrations appears to follow rather the custom of the motor trade in that instead of being "straight" photographs of the firm's machines, the original photographs have been touched up with wash so that they lose a certain amount of that convincing quality which is obtained from a really cleverly taken photograph. Nevertheless, because of this, the catalogue may carry more weight with those who are accustomed to ordinary commercial catalogues.

The catalogue contains a foreword which gives a short history of the Avro firm. One could have done with more of this history, and something might have been said about the various pilots who, from time to time, have made Avro history, which has been almost always equivalent to making the history of British aviation.

A very fair idea of the shapes of the different types of Avro machines is given on a couple of pages illustrating the evolution of the Avro aeroplane from 1902 to 1915, but one cannot help remarking that a very few pounds extra spent on a more artistically minded artist would greatly have improved these pages. Quite apart from the fact that the pictures themselves are as flat as a foot-print, there are, one believes, technical inaccuracies in the drawing of the machines.

Nevertheless, the catalogue is sufficiently impressive, though one takes leave to state that nothing can possibly impress prospective customers half as much as personal experience of the excellent flying and the equally excellent design and construction of the Avro aeroplanes themselves.

TO CAR OWNERS.

Readers of this paper who own cars, and perhaps more especially those readers who are engaged in selling second-hand cars, will be interested in a composition put on the market by Brown Brothers, Limited, Great Eastern Street, E.C. This composition is called "Radiator Neverleak," and is guaranteed to stop any ordinary leak in a radiator. The composition itself in a liquid and readily mixes with water, and the makers guarantee it to contain no acid or chemical which will injure or clog the cooling system.

It operates by forming a kind of plug—or perhaps one should rather say a species of icicle—on the outside of the leak. This plug, when dry, is insoluble in either hot or cold water or alcohol. "Neverleak" is used simply by adding it to the water already in the radiator, and after the leaks have been stopped it is not necessary to change the water, so that the amount of "Neverleak" which has not actually come into operation remains in the radiator to seal automatically any fresh leaks which may occur.

The composition is sold in two sizes of tins, one at 2s. 6d. for radiators not holding more than three gallons, and one at 3s. 6d. for radiators holding from three to eight gallons. As a comfort to the car user the utility of "Neverleak" is obvious, and as an aid to the seller of second-hand cars its use is perhaps still more obvious.

BY ERROR.

Owing to a printer's error it was stated in The Aeroplane of Oct. 29th, on page 1518, that the price of "Aeroplane Structures," by Mr. A. J. S. Pippard and Capt. J. L. Pritchard was 2s. net. The correct figure is 25s. net.

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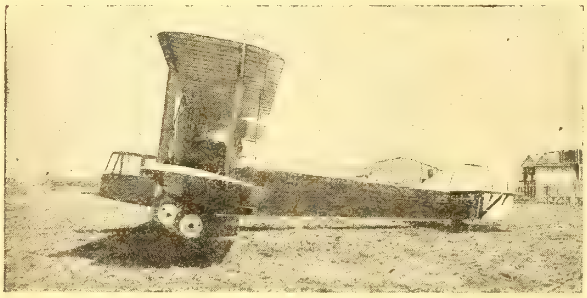

This machine, which can be seen in flight at Hendon, has been designed specially for pleasure and commerce. It is not an adapted war machine. Fitted with two 320 h.p. Rolls-Royce engines, it has a maximum speed of 115 m.p.h., and a flight radius of four hours. The limousine, luxuriously upholstered, and containing an electrically heated carpet, carries four to six passengers. The pilot, with whom communication is maintained by speaking-tube, sits in a separate compartment above and at the rear of the passengers' quarters.

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AIRCRAFT IN PARLIAMENT

HOUSE OF LORDS.

Earl CURZON (the Secretary of State for Foreign Affairs) on October 28th made the following reference to the activities of the Royal Air Force in the course of a speech made in reply to Lord Sydenham on questions relating to the Peace Treaty with Afghanistan.

The Afghans committed a series of acts of unprovoked aggression on the Indian frontier. We were compelled to retaliate. We bombed some of the towns in the interior, and thereupon the Afghans sued for an armistice. In consequence a conference took place at Rawal Pindi, which eventuated in an agreement.

The following is extracted from the answers to questions which the Earl of Wemyss asked the Government on October 30th :—

EAST FORTUNE AIR STATION.

The Marquess of LONDONDERRY said he could assure the noble Earl that the Air Ministry were as fully alive to the interests of economy as the noble Earl himself. At the date of the Armistice there were sixteen airship stations in the United Kingdom. The Admiralty originally intended to retain four rigid airship stations, but in view of the necessity of greatly reducing the programme it was decided that only one station (*i.e.*, Howden) should be retained. Howden would accommodate two ships of the R38 type and one of the R34 type, whereas East Fortune could accommodate only one ship of the R38 type.

With regard to weather conditions at East Fortune, the wind was often a serious difficulty to navigation, coming as it did from the mouth of the Forth The high ground in the vicinity of East Fortune, known as North Berwick Law, constituted a serious danger to airships coming low to find an aerodrome. Howden was more suitable for the airships which they were entitled to contemplate for the future.

The huts and sheds at Howden were of a semi-permanent type To substitute permanent structures would cost £60,000, while to transport the airship sheds at Howden to East Fortune would cost £250,000. The total amount of public money spent on East Fortune from August, 1916, to September 30th, 1919, was £567,700. There were still outstanding liabilities on account of contractors' claims and balances of accounts which were estimated at £35,000. It was anticipated that these claims and balances would be brought to a close at a comparatively early date. Of the total expenditure of £567,700 on East Fortune, the sum of £77,330 had been paid since the Armistice. A certain amount of that payment was due to commitments before the Armistice.

He wished the noble Lord to bear in mind that it was no cheaper to give up a contract when by carrying it out it would add to its value for the purposes of the Disposal Board.

Lord WEMYSS said the reply had been very full and fair. He asked leave to withdraw the motion.

* * *

HOUSE OF COMMONS.

The following oral answer was given on October 28th :—

ROUTE TO EGYPT (CASUALTIES).

Sir WILLIAM JOYNSON-HICKS (*by Private Notice*) asked the Under Secretary of State for the Air Ministry whether his attention had been called to the statements recently made by Col. G. L. P. Henderson as to the serious number of deaths to pilots on the new air route to Egypt, and whether he can make a full statement to the House in regard to the whole position?

The UNDER SECRETARY of STATE for AIR (Major-Gen. Seely) : I cannot go into detail within the limits of a Parliamentary answer, but I shall be glad to make a full statement on the first possible occasion.

The broad facts are these : In the spring and early summer the War Office communicated to us the urgent demands of Egypt for aircraft of large size and endurance in order to cope with the situation, which was described as critical. At the end of March the request was for as many Handley Page machines as could possibly be spared, and at the end of April they telegraphed urgently for additional squadrons. In view of the fact that no Handley Page machine had ever been packed and sent by sea, it was decided that the machines must be sent by air to meet the critical emergency, although considerable risks were necessarily involved.

At the end of April the first squadron was ordered to proceed, and special measures were taken to assist the move of this squadron. An officer with a special and practical knowledge of the route was sent out to arrange for facilities such as landing-grounds, spares, petrol, etc. Flying-boat escorts based on Taranto at first and then on Alexandria were also arranged. The squadron left on May 3rd.

On account of the accidents which occurred, an officer was then stationed at each aerodrome on the route, whose primary duty it was to assist machines in getting through Great difficulty, however, was experienced by these officers in getting messages by telephone or telegram through in time for action to be taken, and also in getting the necessary spares to the points required, owing to the difficulty of transport. Train communication was equally ineffective. A further difficulty was that owing to rapid demobilisation it was impossible to get the best qualified personnel within the time available.

It was further arranged that replacements for the three squadrons who had gone to Egypt should be sent by air by the staging method. Two pilots and a few mechanics were stationed at each staging aerodrome At the present moment fifty-one Handley Page machines have left for Egypt; of these twenty-six have arrived, ten are on later stages of the route, and fifteen have been written off.

A month ago the Chief of the Air Staff requested that a special committee of inquiry should be instituted, composed of officers outside his own Department, and that inquiry is now proceeding. I should here like to emphasise the fact that the making of this route had nothing whatever to do with civil aviation, the whole being organised by the Service side. One machine crashed badly and four lives were lost. Three other bad accidents occurred, involving four fatal and four non-fatal injuries.

This loss of life is greatly to be deplored, but it must be borne in mind that the situation was critical, and that prompt action was essential. I am advised that the sending of these machines by sea would have meant that they could not have been ready for action until many months after they were required.

Sir W. JOYNSON-HICKS : Having regard to the very large loss of life and large cost involved, would not the right hon. Gentleman consider the desirability of having a more independent inquiry than that by some officers of the Air Service?

Major-Gen. SEELY : This inquiry is as independent as it can be. The Chief of the Air Staff realised that it was important to have as independent an inquiry as possible a month ago, owing to the accidents involved in transporting this great number of machines over a practically untried route. The officers who are investigating it—I think they must be officers, because practically everyone who understands the air has been in the Air Service during the War—are outside the Department of the Chief of the Air Staff and are quite independent of that Department.

An HON. MEMBER : Who are they?

Major-General SEELY : I know some of them. If the hon. Member will put down a question I will give him full details. The fullest inquiry will be made. and if it be found that a mistake has been made by anyone concerned, from myself downwards, I need hardly say appropriate action will be taken.

Mr. STEWART : How many of the Air Force are missing?

Major-Gen. SEELY : The machines lost—fifteen—have been totally written off and others have been damaged. The total casualties so far are what I have given.

Mr. HOUSTON : When the right hon. Gentleman says fifteen machines have been written off does he mean that these machines have crashed?

Major-Gen. SEELY : It means that they are of no further use—either fallen into the sea or so broken up that they are of no use. Twenty-six have arrived.

The following written answers were given on Oct. 28th :—

BLANDFORD CAMP.

Major-Gen. SEELY, replying to Major Colfax, said that about fifty women are conveyed by lorry from Blandford to the camp. They return home by Service train. The women staff are of two categories—mobile and immobile. The former are housed in the camp. The terms of service of the latter do not allow this to be done compulsorily. As the Records Office is shortly to be moved from Blandford, it is not considered desirable to substitute and train fresh mobile staff to take the place of the latter. Reductions in personnel are continuously taking place, and the women staff show a reduction of 37 per cent. between July 31st and Sept. 30th.

The construction of the railway from Blandford to the camp was started in July, 1919 [1918?], and the line was first used for traffic in February, 1919, whilst still under construction

AIR STATIONS.—ORKNEY AND SHETLAND.

Major-Gen. SEELY, replying to Sir W. Joynson-Hicks, said that the air stations in the Orkneys and Shetlands have been, or are being, closed down with the exception of two. No new huts are being built, but at one of the stations to be retained wooden huts from other stations in the Orkneys and three small aeroplane sheds are being re-erected.

There are three air stations in the Orkney Islands; one of these is being closed down as speedily as possible. There are eight air stations in the Shetland Islands. The personnel of these stations was 292 officers and 1,836 airmen. There are now 21 officers and 305 airmen. As soon as all valuable stores have been evacuated the two stations which are being retained will be placed in charge of care and maintenance parties, except during the months when the fleet is exercising, at which times the personnel will be temporarily increased.

It is not possible without an unjustifiable expenditure of labour to give the total expenditure at those stations during the war on flying and to give the cost per hour of flying. No large quantities of stores have been left in the open, but Major-Gen. Seely is having further inquiries made on the point.

A Court of Inquiry was held in the spring of this year into the causes for deficiencies in the stores of the Shetland Wing. The Court found that, owing to the difficulties experienced in the administration of these outlying stations, the system of storekeeping was in certain instances imperfect, with the result that the book and actual stocks did not agree, both deficiencies and surpluses being shown. The amount of the deficiency was about £1,000.

WOODSFORD AERODROME.

Dr. MACNAMARA, replying to a question Major Colfox asked the Under-Secretary of State for Air, said that he had been asked to reply as the Woodsford Aerodrome is in Admiralty occupation. The completion of the aerodrome as an airship station has been abandoned. A few minor works are still in hand to complete the buildings required for use by the Admiralty. Special workmen's trains are not being run; they were stopped on Sept. 13th. The approximate total cost of the aerodrome will be £185,000. The station is to be used for the temporary storage of machinery. As regards the land, the farm tenant has never been dispossessed of the portion referred to, and is still in occupation. The requisition cannot, however, be withdrawn until the question of the ultimate disposal of the station is settled.

The following oral answer was given on October 29th :—

GERMAN AIRCRAFT.

Sir F. HALL asked the Under Secretary of State for Foreign Affairs if the German Government have been required to furnish particulars of all aircraft and air materials sold or exported since the Armistice; and to pay its value by January 31st, 1920; if the Allies have any definite information that Germany has sold or exported aircraft or air materials to Sweden, contrary to her undertakings; if so, why no practical steps have been taken sooner to prevent such action; and what means will be adopted to ensure that information furnished under this head by Germany in accordance with the requirements of the Allies will be accurate?

Mr. HARMSWORTH : This question is receiving the consideration of the Peace Conference, who are taking all the necessary measures on the matters raised by the hon. and gallant Member.

Sir F. HALL : Is the hon. Gentleman aware that sales of aeronautical material have taken place in Sweden for and on behalf of Germany; who has received the proceeds of those sales; and has the Supreme Council of the Allies declared these sales null and void?

The following written answers were given on October 29th :—

AIRCRAFT FACTORY, FARNBOROUGH.

Mr. HOPE, replying to a question asked the Under Secretary of State to the Air Ministry by Sir W. Joynson-Hicks, said : I have been asked to answer this question. The present strength of the personnel at the Royal Aircraft Establishment, Farnborough, is 2,330, of whom 237 are trade lads and 356 are women. Reductions in staff are continuing, and it is anticipated that the strength will eventually be reduced to 1,200. It is proposed that the factory shall be used in future as an experiment and research establishment for the investigation of aerodynamical and aero-engine problems.

AIRCRAFT PRODUCTION AND INSPECTION DEPARTMENTS.

Mr. HOPE, replying to Sir W. Joynson-Hicks, said : The Aircraft Production Department, of which the Aircraft Inspection Directorate forms a part, is still in existence. The total headquarters staff is 1,932, the annual cost in salaries being £422,897. These figures include the staffs of the three Directorates of Supply, Research, and Inspection, together with the Accounts Branch and other common services. The staff of the Aircraft Inspection Directorate alone numbers 300, of which the annual cost is £88,507.

EAST FORTUNE STATION.

Major.-Gen. SEELY, replying to Mr. John Hope, said: I am informed that the payments made for works, buildings, land, machinery and plant, etc., from the date of the Armistice to September 30th have amounted to £77,000. The cost of maintaining the aerodrome in peace time may be estimated at £29,000, but it is difficult to estimate the saving entailed in giving up the station in other directions, as that would depend on the amount of personnel and material transferred to other airship stations.

NO. 2 NORTHERN AIRCRAFT DEPOT.

Major.-Gen. SEELY, replying to a question by Sir W. Joynson-Hicks, asking how many men are employed at No. 2 Northern Aircraft Depot, said: This repair depot is being closed down. The strength at present is 894, or 33 per cent. less than it was at the end of September. The strength will be reduced to a care and maintenance party by the middle of next month. Since October 15th, when repair work ceased, the staff have been employed in clearing up and concentrating stores for disposal.

RECORD DEPARTMENT, BLANDFORD.

Major-Gen. SEELY, replying to Sir W. Joynson-Hicks, said that the number of women clerks and typists employed at Blandford on September 30th, 1919, was 669. Special trains are still run from Bournemouth.

STORES DEPOT, MILTON.

Major-Gen. SEELY, replying to Major D. Davies, said: No. 3 Stores Depot, Milton, near Didcot, is used for the storage of aeroplane spare parts, raw material, soft goods, and canvas hangars. The strength at the present time is 1,648, and it is intended to reduce this number by December 1st next to 1,221. This is one of the three stores depots which it will be necessary to retain for the Royal Air Force.

ORDNANCE SURVEY (AERIAL PHOTOGRAPHY).

Lieut.-Col. MOORE-BRABAZON asked the Under Secretary of State to the Air Ministry what steps, if any, have been taken to use the experience obtained during the War in aerial photography for mapping purposes towards revising and helping in ordnance survey work in England, in view of the fact that so many maps are now out of date?

Major-Gen. SEELY: The Board of Agriculture is responsible for Ordnance Survey Maps. A Committee, with representatives of the War Office, Admiralty, and Air Ministry, have been considering the general question of maps, including those specially required for air purposes, for which, undoubtedly, aerial photography will be of the greatest value.

The following written answers were given on October 30th:—

ROYAL AIR FORCE.—AIR STATIONS.

Major LANE-FOX asked the Under Secretary of State for Air what is the present staff employed at the aerodromes at Tadcaster and Sherburn-in-Elmet, respectively; what has been the average monthly cost of these aerodromes during the past three months; what useful purpose have they fulfilled; and what is the policy of the Government as to their continued existence?

Major-Gen. SEELY: At September 30th, 1919, the number of staff employed at these stations was as follows:—

Tadcaster	242
Sherburn-in-Elmet	89

The average monthly cost during the last three months (July to September) has been £5,700 and £1,700 respectively. This has been greatly reduced during the present month. These stations are being utilised as headquarters for the storage of standard aeroplanes, and can be used for civil aviation purposes. They are to be closed down when the valuable stock now stored there has been evacuated.

Mr. R. GWYNNE asked the Under Secretary of State for Air for what purpose the air station at Polegate is still being retained; when the airships were removed; how many men and women were employed there in June last; and how many are employed there at the present time?

Major-Gen. SEELY: As the responsibility for lighter-than-air craft has now been transferred to the Air Ministry, my right hon. Friend the First Lord of the Admiralty has asked me to reply to this question. The airship station at Polegate is being closed down. At the moment it is used for the storage of small airships and stores which are in course of transfer to the Disposal Board. As soon as these have been disposed of the station will be evacuated. The strength at the dates mentioned by my hon. Friend was as follows:—

	June 30th, 1919.	Oct. 28th, 1919.
Royal Air Force—		
Officers	5	2
Other ranks	24	22
W.R.A.F.	15	—
	44	24

Four of the personnel (at October 28th) are employed on meteorological duties at Beachy Head.

ROUTE TO EGYPT (LOSSES INQUIRY).

Sir W. JOYNSON-HICKS asked the Under Secretary of State for Air who are the officers making inquiry into the recent losses on the Egypt Route, and if evidence is being taken on oath?

Major-Gen. SEELY: The Members of the Committee of Inquiry referred to by my hon. Friend are as follows:—

President: Air Vice-Marshal E. L. Ellington, C.B., C.M.G., C.B.E., Director-General of Supply and Research, Air Ministry.

Mr. G. B. Cockburn, O.B.E., Head of the Accidents Branch of the Department of the Controller-General of Civil Aviation, Air Ministry.

Air Commodore H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., Director of Research, Ministry of Munitions.

Air Commodore A. R. Borton, C.M.G., D.S.O., A.F.C.

The last-named officer has had great experience of the work to be investigated by the Committee. He has flown in a Handley Page machine over the route to India and has surveyed part of the route on to Australia. The Committee is not taking evidence on oath.

THE ROYAL AERO CLUB.

GOLF MEETING.

Addington Golf Course, near Croydon, Tuesday, November 18th, 1919, commencing at 9.30 a.m.

Morning Round.—Eighteen holes, under handicap medal round. First prize, value £10, presented by Lt.-Col. F. E. McClean and Lt.-Col. J. T. C. Moore-Brabazon, M.P. Second prize, value £5, presented by Mr. E. W. Touboul.

Afternoon Round.—Eighteen holes under handicap. Bogey. First prize, value £10, presented by Mr. Stanley May. Second prize, value £5, presented by Lt.-Col. Charles Jarrott.

Handicap limited to eighteen. Entries close Thursday, November 13th, 1919, at 6 p.m. No entrance fee. Members wishing to compete are to forward their names to the Secretary, giving name of golf club and handicap.

November 3rd, 1919. Harold E. Perrin, Secretary.

THE ROYAL AERONAUTICAL SOCIETY.

(SCOTTISH BRANCH).

Sir William Beardmore presided as chairman at a meeting of the Scottish branch of the Royal Aeronautical Society held in Glasgow on Oct. 29th. In the course of the proceedings it was announced that the Council in London had elected Sir William Beardmore, General James G. Weir, Dr. T. Blackwood Murray and Professor J. D. Cormack of the Glasgow University as Fellows of the Society.

The Chairman said that already over 140 members had joined the Scottish branch. Their immediate aim was a membership of 1,000, and when that was attained the Society would be on a self-supporting basis. To carry on the work in the meantime the Council proposed to raise an initial establishment fund.

Professor Cormack, who was largely responsible for aircraft equipment and supply during the war, delivered the inaugural address. He pleaded that women ought to be admitted to membership. He did not think that a single aeroplane had been built in Scotland before the war. But during the war a total of 2,250 aeroplanes of seven types were constructed in the country.

The R.34 was a feather in the cap of Glasgow. Flying-boat hulls were constructed on the Clyde and elsewhere, and 2,127 aero engines were constructed. He felt that those who had been pilots or observers should be provided with opportunities of meeting together.

THE METEOROLOGICAL OFFICE.

It is expected that at an early date the reorganisation which will combine the Meteorological Office with the weather services of the Air Ministry, the Navy, and the Royal Engineers will be effected under the Department of the Controller-General of Civil Aviation. The arrangements for this amalgamation are now practically complete. Sir Napier Shaw, the present Director of the Meteorological Office at South Kensington, will be the Director.

The headquarters of the amalgamated services will be at the Air Ministry, Canada House, Kingsway. It is understood that the forecasting department and other departments of the Meteorological Office will be transferred from South Kensington to the Air Ministry, while the statistical department and the library will remain at the present office in Exhibition Road.

The British Rainfall Association, which was founded in 1860, and which has been a very successful private enterprise, will come under the Director of the Meteorological Office, but it is expected that its special work will continue to be carried on at Camden Square.

The combined services will be in close touch with all the Colonial and foreign observatories, and the Air Minister will assume Parliamentary responsibility for the new combined department.

"BLINDED."

The following letter was addressed to the "Times" by Admiral of the Fleet Lord Fisher of Kilverstone, and appeared in that print on Oct. 31st:—

Sir,—It is said of the Jews that "their eyes are blinded to this day" to what is, to us Christians, so transparent a truth. That can be said of the politicians, Parliament, and the public.

It's as clear as daylight that future war at sea absolutely precludes the use of any vessel of war that can't go under water, because aircraft will compel it. So why keep any of the present lot? Not only that, but you've got also to scrap all the admirals and superior officers because they won't do for the new job! Put them all in some museum—like Greenwich Hospital. (Keep the submarines and Co.)

All you want is the present naval side of the Air Force—that's the future Navy—only costing a few millions!

But what is one to say of the Army Estimates being over four hundred millions sterling one year after the most devastating Armistice the world ever heard of? (Are we at war? Who with?) The Navy Estimates the year we built the Dreadnoughts and had war in sight with Germany for certain were only 38 millions sterling!

Four hundred and five millions now for the Army—35 millions then for the Navy! What a contrast. Is the whole nation blinded like the Jews?

And yet "the Articles of War" which were read by the captain in old days (when I first came to sea) every Sabbath Day in the Navy had this preamble in the Act of Parliament:—

"It is upon the Navy whereon, under the good Providence of God, the wealth, peace and safety of this kingdom doth chiefly depend" (or words to that effect).

Yours, **Fisher.**

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

War Office, Oct. 27th.

Regular Forces.—Overseas Forces.—Canada.—E. Ontario R.—Temp. Lt. G. D. Gillie, M.C., ceased to be secd. to R.A.F. (Sept. 21st) (substituted for "Gazette" notification May 28th, page 6016, incorrectly describing date as May 15th); Temp. Lt. A. E. de M. Jarvis, D.F.C., relinquishes his commn. in the O.M.F.C. on appt. to a Short Service commn. in the R.A.F. (Oct. 9th).

War Office, Oct. 28th.

Territorial Force.—Infantry.—4th Bn., Glouc. R.—Sec. Lt. D. Jones to be Lt., and to remain secd. R.A.F. (May 1st); Sec. Lt. W. H Hadfield to be Lt. (May 1st).

6th Bn Arg. and Suth'd Highrs.—Lt. W. A. S. Brown is secd. for service with R.F.C. (April 23rd, 1916).

War Office, Oct. 29th.

Regular Forces.—Corps of Royal Engineers.—Temp. Sec. Lts., from R.A.F., to be temp. Lts. :—C. W. Pidcock, H. N. Thornton, Sept. 30th.

Temp. Sec. Lts., from R.A.F., to be temp. Sec. Lts. :—F. E. West, Sept. 30th; E. A. Stratton, Oct. 6th.

War Office, Oct. 30th.

Regular Forces.—Royal Regiment of Artillery.—R.H. and R.F.A.—Lt. C. R. Robbins, M.C., D.F.C., resigns his commn., Oct. 31st, and is granted the rank of Capt.

War Office, Oct. 31st.

Regular Forces.—Memorandum.—Observer Officer C. Lillicrap, from R.A.F., to be temp. Lt. for duty with I.W.T., Oct. 16th.

War Office, Nov. 1st.

Territorial Force.—Infantry.—2nd Bn., Lond. R.—Sec. Lt. J. Oliver to be Lt., and remain seconded (R.A.F.), May 1st; Sec. Lt. W. F. List to be Lt., and remain seconded (R.A.F.), May 1st.

AIR FORCE.

Air Ministry, Oct. 24th.

R.A.F.—The classification of Maj. H. J. Newton-Clare, O.B.E., is "T," and not "S.O.," as stated in "Gazette" of Aug. 1st.

The classification of Capt. F. Workman, M.C., is "T," and not "A," as stated in "Gazette" of Aug. 1st.

The classification of Capt. K. R. Park, M.C., is "A," and not "T." as stated in "Gazette" of Aug. 1st.

The classification of Capt. W. P. Groves is "S.O.," and not "T." as stated in "Gazette" of Aug. 1st.

The classification of Capt. G. L. Hunting is "S.O.," and not "T." as stated in "Gazette" of Aug. 1st.

The classification of Capt. A. A. B. Thomson, M.C., is "A.," and not "S." as stated in "Gazette" of Aug. 1st

The classification of Lt J. M' McEntegart is "S O.," and not "T." as stated in "Gazette" of Aug. 1st.

The classification of Lt. H. C. Pyper is "S O.," and not "Ad." as stated in "Gazette" of Aug. 1st.

The classification of Lt. H. O. Long is "O.," and not "Ad" as stated in "Gazette" of Aug. 1st.

The notification in "Gazette" of Sept. 5th concerning Capt. H. W. G. Jones, M.C. (A.), is cancelled. (The notification in "Gazette" of Aug. 1st is to stand.)

Staff Officer, 3rd Class (P.).—Flt. Lt. H. R Kavanagh, M.B.E., Oct. 15th, vice Flt. Lt. H H. Clarke.

Flying Branch.—Flt. Lt. J A. Hartcup to be Flt Lt (A.), from (S.O.), Sept. 10th.

Flt. Lt. (actg. Sqdn. Ldr.) N. G. Stewart-Dawson, D.S.C., relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr. (A. and S.), Oct. 15th.

Pilot Officer J. L. Airey to be Flying Officer, Aug 7th

The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. C. Maddox (Sec. Lt., Welsh R.), July 14th; Lt. (Hon. Capt.) O. M. Greg (Capt., R. War. R.), Sept. 18th; Lt. E. J. Dease (Sec. Lt., Rif. Brig.), Lt. M. Tod (Lt., Black Watch), Sec. Lt. (Hon. Lt.) C R. A. Wallis (Lt., R.G.A.), Oct. 8th; Capt. W. McKay (Lt., Sea. Highrs.), Lt. F. Coxen (Lt., R.F.A.), Oct. 13th; Lt. R. S. Butler (E. Surr. R.), Oct. 14th; Capt C Gordon-Davis (Capt., N. Staff. R.), Maj A. P. Pargiter, M.C. (Capt., R. Ir. Regt.), Oct. 15th.

Transferred to unempld. list :—Sec. Lt. N. P. Aldred, Sec Lt. B. R. Brinton, Sec. Lt. R. H. Cole, Sec. Lt. J. W. Grier, Sec. Lt. W. J. Hoxworth, Sec. Lt. E. A. Hunt, Sec. Lt. E. L R. King, Sec. Lt. D. F MacArthur, Sec. Lt. F. G. McGinn, Sec. Lt. D. G. Moore, Sec. Lt. C. C. M'ounce, Sec. Lt D. Sapte, Sec. Lt. H. Smart, Sec. Lt. N. W. Squire, Sec. Lt. H. H. Thomson, Sec Lt H. A. Zinck, Sec. Lt. W L. Warke, Sec. Lt. H. O. Wyse, Feb. 1st; Lt. W W. Scott, Feb. 6th; Sec. Lt. F. W. Elliott, Feb. 28th; Lt. G. R. Savage, March 1st; Capt. L. D. Bawlf, March 20th; Sec. Lt J. E. Jennings, April 2nd; Lt. A. W. Cameron, Lt. G. D. Floyd, April 15th; Lt. G. C. Logan, April 17th; Sec. Lt. A. V. Bonner, Lt. G. K Trim, April 19th; Sec. Lt. W. J. Tudhope, April 23rd; Sec. Lt. C. H. Stephens, April 25th; Sec Lt. J. C. Fyfe, Sec. Lt. C. E. Nicholas, May 1st; Lt. F. F H. E. Kolligs, May 12th (substituted for notification in "Gazette" of Sept. 5th, wherein this officer's name was shown as "F. H. E. Kolligs"); Sec. Lt. J. A. Mackay, May 16th; Lt. H. J. MacDonald, May 20th; Sec. Lt. E M. Wintham, May 21st; Capt. B. D. Hobbs, D.S.O., D.S.C., June 3rd; Lt. H. J. Richardson, June 16th; Sec. Lt W R Binch, Sec. Lt. T. L. Harding (substituted for notification in "Gazette" of Aug. 26th), July 12th; Lt. A. M' Jackson, July 19th; Lt. A. F. Woodward-Gregory, July 22nd; Lt. C. Turner, Aug. 2nd (substituted for notification in "Gazette" of Sept. 5th, wherein this officer was described as a Sec. Lt.); Sec. Lt. F. J. S. Clayden, Aug. 4th; Sec. Lt. G. M. Hay, Aug. 7th; Capt. M'. Lewis, Aug. 14th; Sec. Lt. H. R. A. P. Watson, Aug. 19th; Lt. H. L. Tamplin, Aug. 22nd; Sec. Lt. F. H. White, Aug. 29th; Sec. Lt. C. W. R Hodges, Sec. Lt. L. P. Jackson, Aug. 30th; Sec Lt. H. P Hodges, Sept. 1st; Lt. A. Hill, Sec. Lt. N. E. D Hutchinson, Capt F. P. Holliday, D.S.O., M.C., A.F.C., Sept 3rd; Lt. W Henson, Sept 4th; Sec. Lt. F. Ibbotson, Lt. T. W. Jay, Sept. 5th; Sec Lt. J. M. Brunton, Sec Lt E. R. Hiscocks, Lt R K. Jenkins, Lt.-Col. F. H. Jenkins, O.B.E., M.C., Sec. Lt. H. Hollick-Kenyon, Sept. 6th; Sec. Lt. W. H. Clarkson, Lt. W E. Hazelton, Sept. 7th; Lt F. E Gritton, Lt J. H. Hedding, Lt. J. W. Milner, Sept 10th; Lt A. C. Hill, Sept. 11th; Sec. Lt. F. W. Hill, Sept. 15th; Sec. Lt R. N. G Macey, Sept. 16th; Sec. Lt W. Lee, Sept. 17th; Lt. H. R. Hollis, Lt. A. W. M. Horne, Sec. Lt. D L Nicholas, Sept. 18th; Lt. J. B. Bales, Lt. J. Beattie, Lt. F. B. Champness, Lt. F. E. Hills, Sec. Lt. A. J. Hunt, Lt. J. O. Stead, Sept. 19th; Sec. Lt. E. G. Cook, Sec. Lt. C. S. Hosegood, Sept 20th; Sec. Lt. J. Browning, Sept. 21st; Sec. Lt. J. S. Bellis, Sec. Lt A. W. Higgett, Lt G. D. Wigley, Sept. 23rd; Lt. G. R. Burge, Sec. Lt. A. G. Hill, Lt. B. S. Holloway, Sec. Lt O. Lane, Sec. Lt G. A. Lynch, Lt. W. St. J. Scott-Scott, Lt. A. Siddall, Sec. Lt. F. Van-Praagh, Sec. Lt. C. N. Yelverton, Sept. 24th; Sec. Lt. H. N. V. Barnes, Sec. Lt. S. N. Giroux, Sec. Lt. N. O. Harvey, Lt. A. H. Harris, Sec. Lt E. S. Marsh, Lt. F. A. Shippam, Sept. 25th; Lt. S. C. Harker, Lt. D. V. Hodgson, Sec. Lt. F. G. Hughes, Sec. Lt. A. C. James, Capt. D. G. Murray, Sec. Lt. H. Nattrass, Sec. Lt. H. Plackett, Lt. J. H. Reeves, M.C., Capt. C. Ryder, Sec. Lt. W. N. Shuttleworth, Sec. Lt. H. Suter, Sept. 26th; Lt. C. D. W. Payley, Sec. Lt. B. H. Henwood, Sec. Lt. W. Hunt, Lt. M. F. Sutton, Sept. 27th; Lt. F. H. Allchurch, Sec. Lt. F. W. Ball, Lt. E. P. Cavanah, Sec. Lt. E. R. Clayton, Capt. A. G. Moore, Sec. Lt. W M. Munshaw, Lt. C. Seedhouse, Sept. 28th, Lt. J. S. Heagerty, Lt. R Main, Lt. L. C. Pockney, Sept. 29th; Lt. S. E. Wise, Sept. 30th; Sec. Lt. E. Maloney, Oct. 4th; Lt. J. E. G. Hassall, Sec. Lt. R. N. Hesketh, Lt. T. C. Owen, Oct. 8th; Lt. K. W. J. Hall, Lt. E. Jackson, Lt. E A. Locke-Waters, Oct. 9th; Sec. Lt. E. G. A. Breed, Sec. Lt P. E. Clarke, Sec. Lt. F. W. Dunnett, M.C., Sec. Lt. V. Foster, Lt. R. Musgrave, Lt. A. J. Warwick, Sec. Lt. S. H. Wells, Oct. 10th; Maj. P. L. Holmes, D.S.C., Lt. R. J. Hook, D.F.C., Sec. Lt. (Hon. Lt.) J Jackson, Lt. S. H. Ware, Sec. Lt. E. Young, Oct. 11th; Lt. W. S. Campbell, Lt. J. R. Field, Capt. E. S. Goodwin, A.F.C., Lt. S. H. Spencer, Lt. J. M. Walker, Oct. 12th; Lt. P. E. H. Van-Baerle, Oct. 13th; Lt. D. J. Dorey, Sec. Lt. G. A. Evans, Lt. O. D. Freeman, Sec. Lt. H. P. N Gubbins, Lt A. Jerrard, V.C., Lt. A. C. A. Scates, Sec. Lt. R. B. Stock, Lt. H. E. Symons,, Oct. 14th; Sec. Lt. J. O. Armes, Lt. S. F. Baker, Lt. L. J. Bayley, Sec. Lt. T. V. Callard, Sec. Lt. A S. Draisey, Capt. J. O. Groves, Lt. V. G. Hinds, Lt. J. J. W. Nicholson, D.F.C., Sec. Lt. A. E. Sell, Sec. Lt. E. S. Smyth, Lt. E. R. Stranger, Sec. Lt. L. Timmons, Sec. Lt. S. T. Tipper, Sec Lt. F Wood, Oct. 15th; Sec. Lt. E. B. Cross, Oct. 17th; Lt. R. S. Higgens, Oct. 20th; Capt. H. F. S. Drewitt, M.C., A.F.C., Oct. 21st; Lt. W. D. Bostock, Sec. Lt. (Hon. Lt.) G. N. Thomson, D.F.C., Sec. Lt. J. Woods, Oct. 22nd; Sec. Lt. J. E. Hofman, Sec. Lt. J. V. Melvill, Sec. Lt W. H Oldfield, Oct. 23rd.

Lt.-Col. C. M. P. Brabazon, O.B.E. (Maj., Irish Gds.), relinquishes his commn. on account of ill-health contracted on active service, Oct. 22nd.

Capt. S. H. Long, D.S.O., M.C. (Lt., Durh. L.I.), resigns his commn. and is granted the rank of Maj., July 31st (substituted for notification in "Gazette" of Aug. 8th).

Lt. H. A. Miller relinquishes his commission on account of ill-health contracted on active service, and is granted rank of Capt., Aug. 15th.

Lt. (Hon. Capt.) E. Fletcher (R.A.S.C.) (T.F.), relinquishes his commission on account of ill-health caused by wounds, and is permitted to retain rank of Capt., Oct. 6th.

Lt. D. Bonnard relinquishes his commission on account of ill-health, and is permitted to retain his rank, Oct 14th

Sec. Lt. (Hon. Lt.) T. A. Evans relinquishes his commission on account of ill-health contracted on active service, and is permitted to retain rank of Lt., Oct. 15th.

The following Sec. Lts. relinquish their commissions on account of ill-health, and are permitted to retain their rank :—R. L. MacLeod (caused by wounds), Aug. 14th; P. Evans (contracted on active service), Oct. 15th; L. V. Nicol (contracted on active service), Oct 16th.

The notification in "Gazette" of July 18th concerning Sec. Lt. H. G. Souchon is cancelled

The notification in "Gazette" of July 29th concerning Sec. Lt. R. Blanchard is cancelled

The notification in "Gazette" of Aug. 12th concerning Sec. Lt. W. A. Peggs is cancelled.

Administrative.—Flying Offr. A. Anderson to be Flying Offr. from (O.), Aug. 10th.

Sec. Lt. (actg. Capt.) J. W. Jones to be Lt. (April 2nd, 1918), and to retain actg. rank of Capt. until April 30th (substituted for notification in "Gazette" of March 7th.

Sec Lt. C. S. Broughton is graded for purposes of pay and allowances as Lt. while employed as Lt., May 1st.

Sec. Lt. T. F. T. M. Williams (late Gen List, R.F.C., on prob.), is confirmed in rank as Sec. Lt., July 2nd, 1918.

Sec Lt. (Hon. Lt.) L. A W Knight relinquishes his commission on ceasing to be employed, April 11th (substituted for notification in "Gazette" of June 3rd, wherein this officer was shown under flying Branch).

Transferred to the unemployed list :—Lt. F G. C Fison, Jan. 22nd; Lt. H. Munro, Jan. 31st; Sec. Lt. A. H. Black, Feb. 7th; Lt. G. H. Simpson, May 1st; Lt. A. Macnamara, June 23rd; Capt. E. E. R. Heathcote, Aug. 1st; Sec. Lt G. R Hill, Aug. 29th; Capt. C. Le C. Browning, Sec. Lt. R. St. G. Chester-Master, Sept. 1st; Sec. Lt. R. M. Cobb, Sept. 4th; Lt. C. Jeffs, Sept. 13th; Sec Lt. J. W. Heath, Sept. 14th; Lt. A. D. Jack, Sept. 15th; Lt. D. I. B. McCullock (Yorks R., T.F.), Sept. 19th; Capt. H. J. Smith, Sept. 20th; Lt. A. E. Helton, Sept 22nd; Capt. S. H. Alston, Lt. S. J. Martin, Sept. 23rd; Lt (Hon. Capt.) H. A. de F. Furber, Sec. Lt. T. L. J. Jackson, Sec. Lt. R. Douglas Smith, Lt. W. C. Steward, Sept. 24th; Lt. J. Illingworth, Sec. Lt H. J. Oram, Sept. 25th; Sec. Lt. A. M. Adam, Sec. Lt. J. W. Hughes, Sept. 26th; Sec. Lt. G. Murray, Sept. 27th; Lt. H. Dandy, Sept. 28th; Lt. A. Cattanach, Sept. 30th; Sec. Lt. R. S. Davidson, Oct. 9th; Lt. O. C. Anderson, Lt. H. J. Clark, Sec. Lt. H. Day, Sec. Lt. J. Hart, Maj. L. F. W. Wilson, Oct. 10th; Sec. Lt. W. B. Fox, Oct 11th; Lt. J. H. Cross, Lt. T. Whitaker, Oct. 12th.

Lt. C. W. King relinquishes his commission on account of ill-health and is permitted to retain his rank, Sept. 28th; Sec. Lt. A. C. Baldwin relinquishes his commission on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 16th.

The notification in "Gazette" of April 8th, concerning Sec. Lt. W. Lee is cancelled.

Technical Branch.—Capt. (Hon. Maj.) A. Crook is to be actg Maj. while employed as Maj., Grade (A.), May 1st

Flight Lt. C. F. Pallott to be Flight Lt., Grade (A.), from (S.O.), Sept 29th.

Flying Offr. L. T. Sanderson to be Flying Offr. (Grade (A.), from (S.O.), Oct. 20th.

Flying Offr. J. W. Gardner relinquishes the grading for pay and allowances of Flight Lt. on ceasing to be employed as Flight Lt., Grade (B.), Oct. 13th.

Sec. Lt. F. G. Eckford is graded for purposes of pay and allowances as Lt. while employed as Lt., Grade (A.), May 1st.

The following Sec Lts. are graded for purposes of pay and allowances as Lts. whilst employed as Lts., Grade (B.), May 1st :—F. Adams, (Hon Lt.) H. Allsebrook, R. Fell, H. Haworth, F. Hembley, (Hon. Lt.) R. Kearton, C. H. N Nunn, C. G. A Foole, W. R. Tuddenham (substituted for the notification in "Gazette" of Aug. 19th, wherein the above offrs. were shown as graded for purposes of pay and allowances as Capts., whilst employed as Capts., Grade (B.).

Sec. Lt. G. T. Godfrey to be Lt., June 3rd (since demobilised).

Pilot Offr. (Hon Flight Lt.) F. O. Sonderbye relinquishes the grading for pay and allowances as Flying Officer on ceasing to be employed as Flying Offr., Grade (B.), Oct. 11th

Pilot Offrs. to be Flying Offrs., without pay and allowances of that rank :—H. J. Bagge, A. R. Caldicott, W. Morgan, G. V. Russell, Oct 1st.

Transferred to unemployed list :—Capt. T. M Wilson, Jan. 1st (substituted for the notification in "Gazette" of May 13th); Lt. G. T. Godfrey, June 5th (substituted for the notification in "Gazette" of June 24th); Lt. E. Vredenburg, Aug. 9th; Sec. Lt. J. De La M. C. Rowley, Aug 14th; Lt. A. R Hungerford, Sept. 3rd; Sec. Lt. W. G. Hastie, Sept. 6th; Sec. Lt. A H. Hollingdale, Sept. 8th, Lt. L. Howe, Sept. 9th; Lt. W. J Hembry, Sept. 10th; Lt. C. Lambert, Sept. 11th; Lt. F. S. Mockford, Sept. 15th; Lt. A. H Varian, Sept. 16th (substituted for the notification in "Gazette" of Oct. 10th, wherein he was shown as Sec. Lt.); Lt. T. H. Birdsall, Sec Lt. G. H. Winckworth, Sept. 19th; Lt. F. E. Bayley, Sec. Lt. L. Comer, Sept 20th; Lt. G. C. Bailey, D.F.C., Sept. 23rd; Sec. Lt. (Hon Lt.) W. Burchall-Crookes, Sec. Lt. L B. Mackinlay, Sept. 24th; Lt. B. Z. Simpson, Capt. W. W. Tullis, Sept 25th; Sec. Lt. F. Woombell, Sept. 26th; Maj. S. J. V. Fill, O.B.E., Sept. 28th; Lt. H. J. Finer, Sept. 29th; Maj. H. A. Cox, Lt. D. A. Parker, Capt. W. O. Pearce, Sept. 30th; Sec. Lt. C. L. B. Voge, Oct. 8th; Lt. H. B. Dell, Lt. G. E. Hawksley, Oct. 9th; Lt E. D. Aldridge, Lt. W. Birtwhistle, Sec. Lt. G. T. H. Field, Lt. H. Howard, Maj. H. C. Wakefield, Oct. 10th, Lt. H. W. G. Drummond, Lt. E. N. G. Exton, M.C., Lt. W. Towell, Oct. 11th; Lt. C. J. Miln, Lt. W. G. Seager, Lt. A. B. West, Oct. 14th; Capt. N. B. Tomlinson, Oct. 16th; Sec. Lt. (Hon. Capt.) W. G. P. Cobbett, Oct. 23rd.

Lt. L. S. Newns relinquishes his commission on account of ill-health (contracted on active service), and is granted the rank of Capt., Oct. 14th.

Lt. R. B. Ashcroft, M.C., (Lt, Notts and Derby R.), relinquishes his commission on account of ill-health (contracted on active service), Oct. 2nd.

The surname of Sec. Lt. J. B. Meikle is as now described, and not "Meilke," as stated in "Gazette" of Sept. 12th.

The notification in "Gazette" of July 29th concerning Lt. P. N. Shone is cancelled.

The notification in "Gazette" of Oct 21st concerning Sec. Lt. (Hon. Lt.) C. A. Assiter is cancelled.

Medical Branch.—Transferred to the unempld. list:—Lt E. F. Wilson, Sept. 25th; Capt. A. H Wade, Lt. E. E. Rollins, Sept. 27th.

The initials of G. S. M'arshall are as now described and not G. F. as stated in "Gazette" of June 3rd.

The surname of H. B. B Greene is as now described and not as shown in "Gazette" of Aug. 29th.

Dental Branch.—Lt. G. O. Roper to be Lt., from (K.B.), June 22nd, 1918 (substituted for the notification in "Gazette" of June 28th, 1918, in which he is shown under Medical Branch).

The following are granted temp. commns. as Lts.:—C. A. E. Cook, June 10th, 1918 (substituted for notification in "Gazette" of June 25th, 1918, in which he is shown under Medical Branch); K. Batten, July 19th, 1918 (substituted for notification in "Gazette" of July 26th, 1918, in which he is shown under Medical Branch).

The Christian names of Stanley Gordon Smith are as now described and not as shown in "Gazette" of Aug. 20th.

Chaplains Branch.—Transferred to unempld. list:—The Rev. T. L. Beveridge, Sept. 2nd; the Rev. N. T. Hopkins, B.A., Sept. 3rd; the Rev. E. C. Storr, M'.A., Oct. 11th.

The notification in "Gazette" of Sept. 26th, concerning the Rev. A. J. N. Saunders is cancelled. ("Gazette" of June 27th to stand.)

Memoranda.—The following temp. appointment is made:—Wing Cmdr. R. Gordon, C.M.G., D.S.O., and to be actg Group Capt. without pay and allowances of that rank whilst specially empld., Oct. 25th.

P F.O. E. Hobbs is granted an hon. commn. as Sec Lt., May 30th.

The following Cadets are granted hon. commns. as Sec. Lts.:—181108 H. Ward, Jan. 14th; M2/181159 B. B. Clarkson, Feb. 5th; 60464 H. C. Smart, Feb. 17th; 31205 E. R. McColgan, March 2nd; 128369 H. F. O. Farrell, March 25th; 4084 W. M. G. Greenhill, Aug. 9th; P/13041 H. K Kelly, Aug. 30th; 949000 W. T. Dowden, Sept. 26th.

Transferred to unempld. list:—Lt. L. Timks, from (S.O.), Sept. 17th; Sec. Lt. B. F. Browne, from (S.O.), Sept. 30th, Maj. W. Higginbotham, Sec. Lt. W. S. Sholl, from (S.O.), Maj. N. Sladden, from (S.O.), Oct. 11th; Lt. J. G. Spencer, from (S.O.), Oct, 12th; Lt. J. B. Sharples, M.B.E., from (S.O.), Oct. 23rd.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Oct. 24th. They will retain their seniority in the substantive rank last held by them prior to the grant of the short service commn., except that officers gazetted to a rank lower than their previous substantive rank will be placed at the head of the list of officers of the rank to which they are now gazetted, and will retain seniority relative to each other in accordance with their previous position on the gradation list.

In the case of officers now gazetted Flying and Observer Officer from Pilot Officer, seniority will date from the date of Gazette.

Squadron Leaders.—H. G. Atkinson, O.B.E. (T.), E. M'. Bettington, O.B.E. (T.), H. C. Fuller (A'ship).

Flight Lt. (from Squadron Leader).—J. R. Howett (A.).

Flight Lts.—F R. Alford, M.C (T.), J. E. M Atherley (Ad.), J. C. Atkinson (T.), V. H. Baker, M.C., A.F.C. (A.), C. Boumphrey (A. and S.), H. G. Bowen (A.), T. G Bowler (A.), W. S. Caster, M.C. (A.), F. H. Coleman (A.), N. R. Cook, D.S.C. (A. and S.), E J Cooper, D.S.C. (A. and S.), L. G Le B. Croke (O.), B C. H Cross, D.F.C. (S.), C. B. Dalison, A.F.C. (A and S.), R. E. H. Daniel (T.), G. G. Dawson (T.), E. E. Deans, D.S.C. (A. and S.), J. C. O. Dickson, D.F.C. (A.), J. L L. Duffus (T.), G H. Errington (Ad.), E C. W. Fitzherbert, D.S.C. (T.), A. W. Fletcher, A.F.C (A. and S.), W. E. C. B. C Forsyth (S.), M. B Frew, A.F.C., D.S.O., M.C. (A.), S. Frost (T.), W E. Gardner, D.S.C. (A.), T. R Hackman (A.), E. St. C. Harnett, O.B.E. (S.O.), H. Hemming, A.F.C. (A.), L. A. Hervey (A.), T. E. B. Howe, A.F.C. (A.), H. M. Ireland, D.F.C. (A.), H. C. Irwin, A.F.C. (A'ship), C. H. B. Jenner-Parson, D.F.C. (A.), H. C. Irwin, A.F.C. (A'ship). C. H. B. Jenner-Parson (A.), J H. O. Jones (A.), F C. Lander, A.F.C. (A. and S.), A. Latimer (T.), F. H Laurence, M.C. (A.), A. S. G. Lee, M.C. (A.), A. L. Lingard (T.), W. H M'ackenzie, A.F.C. (A.), W. Man, D.F.C., (A. and S.), G. J. Monson-FitzJohn (T.) A D. Newbury (T.), T. H. Newton, D.S.C. (A and S.), G. M. F O'Brien, D.S.C. (A. and S.), A. H. Peck, D.S.O., M.C (A.), A. R. T. Pipon, D.S.C (S.) W. A. Powell (T.), E. R. Pritchard (A. and S.), A. D Pryor (A.), P. C. Purser, M.C. (A.), H. G. P. Rees (T.), C. B. Ridley, D.S.C (A.), A. Roberts (T.), E. P. Roberts, M.C., D.C.M. (A.), A. Roulstone, M.C (A.) H. P. Rushforth, M.C. (A.), L. C. Sheppee, D.S.C. (A. and S.), E. W. Simpson (S.O.), A. C. Snow (T.), R L. Stevenson, M.B.E. (A.), D. Stewart, A.F.C., (A.), T. O Stud, D.F.C. (A.), T. W Tattersall, M'.B.E. (T.), M. Thomas, A.F.C. (A.), T. F. W. Thompson (A.), E. F. Turner (T.), G E. Walker (A.), W. H. De W Waller, A.F.C., (A.). D. E. Ward (T.), G. F. P. Warren (T.), L. Whitworth, A.F.C., (A'ship), H. E. P. Wigglesworth, D.S.C. (A.), F. T. Williams, M.B.E. (A.), E A. E. Wood (T.), W. P. Woodcock (T.), R. A. Young (Ad.).

Flying Officers (from Flight Lts.):—F. J. W. Mellersh, A.F.C. (A.), G. A H. Pidcock (A.), J. W. Pinder, D.F.C. (A.), W W Wakefield (A.).

Flying Officers.—P. E. D. Addis (Ad.), B. C. Akehurst (T.). A. F. Alexander (A.), C. T Anderson, D.F.C. (A.). M. H. Armstrong (T.), G Baillie (T.), A. C. Bayley (A.), W. Bentley, D.F.C. (A.). H. C. Black (A.), G. N. Blennerhassett, M.C. (A.), G. H. Boyce (A. and S.), T. Brewin (A.), R. F. Browne, D.F.C. (A.), G. M. Bryer, A.F.C. (A.), J. Burdett (T.), V. W. Burgess, A.F.C. (A.). F. O. Burnley (T.) W. J. Burr, M.C., D.C.M., M.M'. (A.), M. H. Butler, D.F.C (A.) S. L. Cannon (A.), R L. Cantle (T.), D V. Carnegie, A.F.C. (A and S.), B. R. Carter (S.), O. E Carter, M.C. (A.), I. R. Cassidy (T.) T. W. Cave, M.C. (T.). J. S. Chick, M.C (A.), F. W. Clarke (T.). P. J. Clayson, M.C., D.F.C. (A.), R. Clowes (A.), J. H. Cooper, M.C. (A.), W. R Cox, M.C., A.F.C. (A.), R. C. Creamer, D.F.C. (A.), P. H. Cummings, D.F.C. (A.), C. C. K Dagg, A.F.C. (A. and S.), G. D. Daly (T.). A. J. Dawes (Ad.), S. Dawson, D.F.C. (A.), M. C. Dick (A.), H. H. Down, A.F.C. (A.), G. F. Drudge (T.), W. F. Dry (T.), D L. Evans, M.C., D.F.C. (A.), N. Fitzgerald Eager (A.), S. S. Flook, D.F.C. (A.), A. H. Flower (A.), G. J. Fowler, A.F.C. (A.), G. Fox-Rule, D.F.C. (A.), C. S. Fulton (S.O.), A. V. Gash (Ad.), J. M'. Glaisher, D.F.C. (A.), S. Graham, M.C., A.F.C. (A.), E. G. Green, M.C. (A.), L. W. R. Grubb (A.), W. Halford, D.F.C. (A.), R. Hall (T.), J. H. H. Halliwell (A.), W. Halliwell (Ad.), L. Hamilton, D.F.C (A.), W. F. Hamilton (A.), H. N. Hampton, D.F.C. (A.), P. Harris (A. and S.), L. G. Harrison (A.), R. Harrison, D.F.C. (A.), J R R. Harvey, M.M. (A. and S.), G. E. Havelock-Sutton, M.C. (Ad.), G. S. L. Hayward, M.C. (A.), A. F. Hempel (A.), V. E. R. Hill (T.), G. S Hodson, A.F.C. (A.), H. L. Holland (A.), R. Hood (A.), G. V. Howard, D.F.C. (A.), G. N. Humphreys (A.), N. W. Hustings (A.), J. W. Hustwaite (Ad.), R. M. Johnson (A. and S.), A. L. Jones (A.), B C. Jones (A.), O J. F. Jones-Lloyd (A.), G. Kidd (A. and S.), A. G. Lamplugh (A.), R. H. Latham (T.), A. Leach, M.C. (A.), E. M. Ling (T.), L. J. Lipscomb (T.), H. G. W. Lock (A.), L. W. Lowen (A.), H. T. Lydford, A.F.C. (A.), E. P. Mackay (A.), I. C. R. Mackenzie (A.), J. M'. McEntegart (S.O.), J. McFarlane, M.C. (A.), E. C. McKenzie-Martin (T.), J. A. McLaren, M.C. (Ad.), E. J. McLoughlin (A.), F. McQuistan, D.F.C. (A.), P. M. McSwiny (A.), G. H. Martingell, A.F.C. (A.), W. K. Mercer (A.), G. F. Moody (A. and S.), G. A. Morgan, A.F.C. (A.), C. P. Murchie (T.), W G. Murray (T.), C. E. Nightingale (T.). M. J Norton (Ad.), A. J. Packham (T.), L. H. Pakenham-Walsh, D.F.C. (A.), M. T. S. Papenfus, D.F.C. (A.), L F. Peaty (T.), L. F. Pendred, D.F.C. (A.), C. Pilkington, A.F.C. (A.), S. L. G. Pope (A. and S.) W. G. Preston, D.F.C. (A.), S L. Quiene, M.C. (A.), R. J. Read (A.). A. R. M. Richards (A.), H. N. C. Robinson, M.C. (A.), R. C. Rodger, M.C., D.C.M. (A.), F. H Rowan (T.), H. St. C. Roy, M.C. (T.) G. Scarrott (Ad.), H. E. Searson, D.F.C. (A.), F. H. Shales (A.), T. MacM. Shields, D.F.C. (A.), W. Sidebottom, D.F.C. (A.), F. H. Sims (Ad.), W. M. Smith (A. and S.), C. B. S. Spackman, D.F.C. (A.), D. A. Stewart, M.C., D.F.C (A.), J. S. Stubbs, D.F.C., A.F.C. (A.). S. Symonds (T.), A. R. Thompson (T.), A. C. Townsend, A.F.C (A.). W. E. Townsend (T.), E. E. Turner, D.F.C., D.S.C. (A.), R. H. Tweedy (T.), E. A. B. Urmston (A.), E. C. Usher (A. and S.), G. O. Venn (A.), T. V. Villiers (T.), L. E. Vine (T.), A. W. S Wagner (Ad.), H. de W. Waller (A.), J. W. Wallwork, M.C. (A.), E. A. M. Waterton (A.) F. N. Whiteley (A.), G. W. M. Whitton (T.), C. G. Wigglesworth, A.F.C. (A'ship), T. M. Williams, M.C., D.F.C. (A.), H. E. Winch (A.), A. E. Woodbridge (A.), E. C. B. Wright (A. and S.), S. G. Wybrow (T.), W. M. Yool (A.), H. N. Young, D.F.C. (A.), E. L. Zink (A.).

Observer Officers.—P. J. Bradley. C. P. M. B. Caillard, P A. Cockeram, M.C., E. J. Garner, A.F.C., O. R. Gayford, D.F.C., R. Hamilton, M.C., A. J. Insall, N. H. Jenkins, D.F.C., D.S.M., H. Smith, D.F.C., A. C. Stevens, J. C. Tulock, W. S. Watson.

Flying Officers (from Pilot Officers).—A. J. Adams (T.), F. Adams (T.), L. W. Allen, M.C (T.), W. Allen (T.), A. T. J. Anderson (A. and S.), W. Bagnall (T.), A. A. W. Barron (T.), E. A J. Brown (A.). B. G. Bryan (T.), A. C S. Buist, M.C. (A.), S D. Carpenter (T.). A. E. Case (T.), P. Christopherson (T.), C. C. Clark (T.), E. H. Colman (A.), F. H. Davis (T.), H. H. Ffrench (Ad.), W. Frederick (T.), W H. Golder, D.S.M. (T.), K. C. L. Gorringe (A.), G. A. Gowler (A.), G. R. St. C. Gwynne-Timothy (A.), O. T Hazell (A.), B. E. Herbert, D.C.M. (A. and S.), S. Herbert, (T.), J. F. Herd (T.), O. A. P. Heron, D.F.C. (A.), W E. Humphreys (T.), J. H. Huxley, D.F.C. (A.), J. D. Jackson (A.), P. J. R. King (A.), F. Kirk (A.), G. Lacey (T.), W. E. Lowrie (T.), F. J. Magee (T.), E Marsden (T.), M. H. McErlean (A.), R C. Michaelson (A. and S.), J. W. Mitchell (T.), L. G. Morris (T.), F. C. North (T.), F. A. O.'Brien (T.), E. S. Osborn (T.), J. Owen, D.F.C., M.M. (A.), G. T. H. Pack (T.), L. A Parker (T.), S. H. Potter (A.), C. Roper (S.), J. Sewell (T.), I. C. Slater (A.), J. H. Slater, M.B.E. (T.), H. A. Smith (T.), G. R. B. Smyth (A.), F. R. Steggall, D.C.M (A.) H. H. Storrs (A.), F. J. Tadman, C.G.M (T.), A. J. H. Taylor (A.), E. Taylor (T.), R. M. Thomas (T.), S. Upton (T.), H. Webb (T.), F. H. Whitmore, D.S.C. (T.), H. B. Williams (A.).

Observer Officers (from Pilot Officers).—A W Bloy, H J. Collins, W. C. Day, M.C., J. H. Gray, T. P T. Jones, B. J. Paget, F Thomasson, D.F.C., M.M., G. I. Thomson, D.F.C.

The classification of Flt. Lt. G. W. Robarts, M.C. (S.O.), is as now described, not (A.) as stated in the "Gazette" of Oct. 10th.

The second Christian name of Flying Officer Rupert Chandos Bryant (A.) is as now described, not Charles, as stated in the "Gazette" of Sept. 12th.

The notifications appearing in "Gazettes" of the dates indicated below, appointing the following officers to short service commns. are cancelled:—Flying Officer F. L Barnard (A.), Flying Officer A. Grimshaw (A.), Flying Officer P. D. Robins (A.), Observer Officer J. C. Wallace, Sept. 12th; Flt. Lt. J. H. D. M'. Campbell (S.O.), Oct. 10th.

The following officers are granted short service commns., with effect from Aug. 1st, not Oct. 10th, as stated in "Gazette" of the latter date: Flt. Lt. H. Cooch, A.M.I.E.E (T.); Flt. Lt. E. L. Johnstone, A.F.C. (A'ship); Flt. Lt. A. J. Osborn (S.O.).

Air Ministry, Oct. 28th.

R.A.F.—Permanent Commissions.—The attention of Officers named in this "Gazette" is directed to Air Ministry Weekly Order No. 866 of 1919, relating to the grant of permanent commns. and to the new rates and conditions of pay and other emoluments.

The following are granted permanent commns. in the R.A.F. in the ranks stated, with effect from Aug. 1st:—

Sqdn. Ldrs.—P. A. Shepherd (S.), G. F. H. Faithfull, O.B.E. (S.O.), M E A. Wright, A.P. (T.), J. C. M. Lowe, A.P. (T.).

Flt. Lts.—C. J. MacKay, M.C., D.F.C. (A.), J. Pearce, O.B.E. (T.), H. K Thorold, D.S.C., A.F.C. (A.), A Coningham, D.S.O., M.C., D.F.C. (A.), N. C. Spratt (A.), J. O. Andrews, D.S.O., M.C. (A.), A Lees (A.), D. O. Mulholland, A.F.C. (A.), W. A. C. Morgan, M.C. (A.), F. H. M. Maynard, A.F.C (A.), G. B A. Baker, M.C. (A.), E J. D. Routh (A.), R. H. M. S. Saundby, M.C., A.F.C. (A.), J. K. Summers, M.C. (A.), N. B. Fuller, M.B.E. (A.), M. R. N. Jennings, M.C., A.F.C. (A.), G. E. Godsave (T.), R S. Aitken, M.C., A.F.C. (A.), J A. Slater, M.C., D.F.C. (A.), R. W. Chappel, M.C. (A.), J. F. A. Day, A.F.C. (A.), J. B. Walmsley, D.F.C. (A.), R. G. E. Fulljames, M.C. (A.), N. Keeble, D.S.C. (A.), W. D. Thom, D.F.C. (A.), F. St. J. Wooliard, A.F.C. (A.), A. H. Orlebar (A.), A. B. Shearer (A.), H. W. Evens (S.), L. M. Bailey, A.F.C. (A.), L. O. Brown, D.S.C., A.F.C. (A. and S.), P. D. Robertson, A.M. (T.), A. R. Mackenzie (A.P. (T.)), D S. Don (A.), C. K. Chandler, M.B.E. (T.), G. W. Biles, D.F.C. (A. and S.), V. R. Scriven, A.F.C. (S.), W. S. Magrath (A.), P. E. Gwyer, M.B.E. (T.), D. Colver, D.F.C. (A.). M. A. J. Orde (T.).

Flying and Observer Officers.—H. M Massey, M.C. (S.O.), C. O. B. Beale, D.S.O. (A.), C. A. Stevens, M.C. (A. and S.), C. R. Steele, D.F.C. (A.), W. A. K. Dalzell (A.), S. M Kinkhead, D.S.C., D.F.C. (A.), P. H. Mackworth, D.F.C. (A. and S.), W. H. Park, M.C., D.F.C. (A.), A. L. Chick, A.F.C. (A.), C. T. Black (A.), E. R. C. Scholefield, D.C.M. (A.), F. Williams, M.C., D.F.C. (A.), J. Cullen, A.F.C. (A.), E W. Broadberry, M.C. (A.), N. S. Dougall, D.F.C. (O.), A. M. Wray, M.C., A.F.C. (A.), E. E. F Loyd (A), J. W. Mullen (O.), W. Sharpe, A.F.C. (A.), I. H. P. McEwen (A.), H. S. P. Walmsley, M.C. (A.), C H. Arnison, M.C. (A.), H. E. Walker, M.C., D.F.C. (A.), G. C. O'Donnell, D.F.C. (A.), H L. Rough, D.F.C. (A.), H. H. Sharp (T.), J. J. Ll Williams, M.C. (A.), C. L. King, M.C., D.F.C. (A.), T. S. Horry, D.F.C. (A.), C. H H. Bilney (A and S.), G. A. Pennington (A. and S.), J. Ll. Findlay, M.C. (A.), S. T B. Cripps (A.), E. B.

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IMPORTANT. Note change of address from York House, Kingsway, to Earl's Court as above.

NOTE.—For further particulars of other Government Property for sale, see "SURPLUS," Price 3d., at all Bookstalls; or by quarterly subscription of 2/- post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W. 1.

Jones (A.), J. R. F. Randell, D.F.C. (A.), G. Y. Tyrrell, M.C. (A.), J. W. Turton-Jones (O.), W. H. Poole, A.F.C., M.M. (A.), C. Rapley (T.), F. G. Brockman (T.), H. Nelson (T.), F. G. Porter (O.), P. J. Parry (A.).

Capt.—E. C. Emmett, M.C., D.F.C. (A.).

The notification appearing in "Gazette," Sept. 16th, appointing Flying Officer P. H. Mackworth, D.F.C., to a Short Service Commn. is cancelled.

The following temp. appts. are made at the Air Ministry:—Staff Officer, 1st Class (Medical).—Wing Comdr. H. Cooper, D.S.O., Sept. 6th. Staff Officers, 2nd Class (Medical).—Flt. Lt. (actg. Sqdn. Ldr.) J. A. Giles, Flt. Lt. (actg. Sqdn. Ldr.) H. A. Treadgold, Sept. 6th

Flying Branch.—Sec. Lts. to be Lts.:—L. Radford, Sept. 15th, 1918; T. Q. Harvey, G. G. Ross-Smith, Nov. 2nd; F. H. Solomon, Jan. 29th; J. R. McL. Keil, May 17th.

Sec. Lt. R. Boyle to be Sec. Lt. (O.), from (Ad.), May 27th, 1918.

6564 Flt. Cadet C. Goatcher is granted a temp. commn. as Sec. Lt. (O.), Sept. 9th, 1918.

Flt. Cadet G. A. Vincent is granted a temp. commn. as Sec. Lt. (A. and S.), Nov 8th, 1918.

The following Flt. Cadets are granted temp. commns. as Sec. Lts. (O.):—175516 A. S. Farquhar, 173527 W. Porter, Oct. 20th, 1918 (substituted for the notification in the "Gazette" of Feb. 14th, wherein the above Cadets were appointed with effect from Oct. 25th, 1918).

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. H. D. Giblett, May 19th; Lt. W. R. McCoo, July 18th (substituted for notification in the "Gazette" of June 3rd); Lt. W. A. Peggs (Lt., Sherwood For.), July 24th; Sec Lt. (Hon. Lt.) H. B. Kennedy (Lt., Can. Field Art.), Aug 1st; Lt. (Hon Capt.) C. O. Lilly, D.S.O. (Capt., Dorset R.), Aug. 28th; Lt. P. J. Long (Capt., R.A.S.C.), Sept. 1st; Lt. G. D. A. Heys (Lt., R.G.A.), Sept. 19th; Capt. A. D. Gaye (Capt., Hereford R.), Sept. 20th; Lt. (Hon. Capt.) P. A. Smith (Capt., Dur L. Inf.), Sept. 22nd; Sec Lt F. Haveland (Lt., R.G.A.), Oct. 9th; Lt.-Col. G. F. Montague (Comdr., R.N.), Oct. 12th; Lt. (Hon. Capt.) R. S. B. Beckett (Capt., Gurkha Rif.), Oct. 13th; Lt. H. R. Eycott-Martin, M.C. (Lt., R.E.), Lt. S. G. Glover, D.C.M. (Lt., R. Ir. Fus.), Oct. 14th; Lt. A. W. Hawkins (Lt., Yorks R.), Oct. 17th; Sec. Lt. B. Bear, M.M. (Lt., E Yorks R.), Oct. 18th; Lt. H. V. Saunderson (Lt., R.F.A.), Oct. 20th, Sec. Lt. (Hon. Lt.) A. J. R. Napier (Lt., Ches. R.), Lt. T. H. J. Wright (Lt., Seaf. Highrs.), Oct. 21st; Sec. Lt. (Hon Lt.) G. E. Clavey (Lt., R.F.A.), Oct. 24th.

Transferred to unempld list:—Sec Lt. W. V. Ashforth, Sec. Lt. A. W. McElroy, Sec. Lt. C. H. Meyer, Sec Lt. M. C. Oliver, Sec. Lt. J. W. Phillips, Sec. Lt. F. R. Rutley, Sec. Lt. E. M. Sheppard, Feb. 1st; Lt. W. H. Fair, Feb. 20th, Sec. Lt. J. Kelly, Feb. 27th; Lt. W. S. Lighthall, D.F.C., March 1st; Sec. Lt. C. E. Smith, March 2nd; Lt. (Hon. Capt.) P. J. Slater, D.F.C., March 16th; Lt. J. S. Forgie, April 1st; Lt. H. P. Salter, April 7th; Capt. W. W. Rogers, M.C., April 19th; Lt. M. C. Healey, M.C., April 25th; Sec. Lt. H. C. Mills, May 1st; Capt. R. H. Sharp, D.F.C., May 8th (substituted for notification in "Gazette" of July 18th); Lt. F. C. Shirtcliffe, May 12th (substituted for notification in "Gazette" of July 18th); Lt. J. A. Jackson, May 19th; Maj. A. De B. Brandon, D.S.O., M.C., May 29th; Lt. G. N. Moore, D.F.C., June 1st; Sec. Lt. E. H. Dodds, June 26th (substituted for notification in "Gazette" of June 20th); Lt. R. N. Smith (substituted for notification in "Gazette" of July 20th), Sec. Lt. W. G. White, July 12th; Lt. I. M. Maclean, Aug 14th; Sec. Lt. C. W. Gillies, Aug. 18th; Capt. M. S. Marsden, Aug. 20th; Lt. W. Strang, Aug. 26th (substituted for notification in "Gazette" of Sept. 9th, wherein the above officer was shown as Sec. Lt.); Lt. E. F. Maillard, Sec. Lt. (Hon. Lt.) J. D. Muir, Aug. 29th; Lt. W. H. McNeilly, Maj. R. H. S. Mealing, Sept. 1st; Sec. Lt. J. McGilchrist, Sept 2nd; Sec. Lt. A. J. R. Murray, Sept. 4th; Lt. F. H. Dear, M.C., Capt. G. Donald, D.F.C., Sept. 5th; Sec. Lt. C. Darbyshire, Sec. Lt. (Hon. Lt.) J. B. MacGill, Sec. Lt. N. L. Mayle, Sept. 6th; Lt. W. Mitton, Sept. 8th; Lt. E. A. Clear, M.C., Lt. R. Jones, Sec. Lt. W. L. Miller, Sec. Lt. D. K. Moore, Sec. Lt. A. Mulholland, Lt. J. W. Templeman, Sec. Lt. C. A. Vanweise, Sept. 10th; Sec. Lt. W. H. Pearce, Sept. 11th; Sec. Lt. E. F. Mattock, Lt. H. B. Maund, Sept. 24th; Lt. W. W. Mackinlay, Lt. S. R. Payne, Sept. 15th; Sec. Lt. R. Fox, Capt. N. Kemsley, A.F.C., Sept. 19th; Sec. Lt. E. F. Darker, Sec. Lt. L. E. G. Judge, M.C., Lt. A. V. I. Roberts, Sec. Lt. W. Wilson, Sept. 20th; Lt. M. MacEwan, M.C., D.F.C., Sept. 21st; Lt. J. A. A. Douglas, Sept. 22nd; Maj. B. S. Benning, Sept. 24th; Lt. H. C. Cooke, Sec. Lt. R. Johnston, Sec. Lt. C. F. Williams, Sept. 25th; Lt. R. C. Bredin, Sec. Lt. E. W. Chess, Lt. W. B. Day, Sec. Lt. E. C. Dearth, Sec Lt. H. C. Wright, Sept. 26th; Sec. Lt. M. R. Dynes, Sec. Lt. G. A. Elliott, Lt. J. A. Galbraith, Sept. 27th; Sec. Lt. D. Croft, Sec. Lt H. E. Dobson, Sec. Lt. M. A. Vachon, Sec. Lt. A. G. J. Whitehouse, Sept. 28th; Lt. S. H. Bell, Sec. Lt. N. M. Foggo, Lt. J. D. Vance, Lt F. Wood, Lt. S. S. Woodman, Sept. 29th, Lt. W. V. Joslen, Oct. 1st; Lt. R. Johnstone, M.C., Oct. 3rd; Lt. A. V. Hurley, Oct. 4th; Lt. R. M. Swyer, Oct. 7th; Sec. Lt. E. S. Burns, Lt. C. H. Jones, Lt. P. A. Marriott, Oct. 8th; Lt. S. A. H. Bowyer, Sec. Lt. J. A. Bramley, Lt. E. M. Brown, Sec. Lt. E. A. Burbidge, Lt. D. P. Capper, Lt. V. H. Clift, Lt. P. B. Cooke, Sec. Lt. D. M. Fraser, Lt. G. T. Griffith, Sec. Lt. L. Joslin, Lt. G. E. Rolleston, Sec. Lt. J. V. Scottorn, Capt. F. J. Terrell, Lt. G. W. Thorpe, Capt. B. Weil, Lt. W. H. Whitlock, Sec. Lt. E. Wrangham, Lt. D. Young, Oct. 9th; Lt. H. W. Auerbach, Lt. L. S. Birch, Lt. H. C. Black, Lt. G. F. Blackburn, Lt. B. R. Carter, Lt. H. J. Crampton, Capt. C. Dunlop, Maj. E. N. Fuller, Lt. I. S. Giffard, Lt. R. M. Jamison, D.F.C., Lt. A. R. Latham, Sec. Lt. A. C. Lloyd, Lt. H. C. Marr, Lt. E. W. R. Matthews, Sec. Lt. R. R. Mutton, Sec. Lt. J. E. Phelps, Lt. A. F. Pope, Sec Lt. J. Rae, Lt. W. A. Ramsay, Sec. Lt. A. P. Roberts, Sec. Lt. W. H. Stiles, Lt. E. Sturman, Lt. (Hon. Capt.) R. K. Thomson, Sec. Lt. J. W. White, Oct. 10th; Sec. Lt. B. I. Beal, Lt. J. A. Craig, D.F.C., Lt. W. E. Davies, Capt A. Duguid, A.F.C., Sec. Lt. J. C. Dunbar, Sec. Lt. P. Fish, Sec. Lt. J. H. Gill, Lt B. W. Godfrey, Sec. Lt. E. B. Lewis, Sec. Lt. G. E. McManus, Sec. Lt. P. C. Mason, Lt. A. T. Maxwell, Sec. Lt. S. C. Millar, Sec. Lt. S. A. C. Newnham, Sec. Lt. A. J. Spencer, Sec. Lt. L. W. G. Ward, Oct. 11th; Capt. J. A. B. Ball, Sec. Lt R. Bretherton, Lt. C. W. Brown, Lt. A. C. Jones, Lt. J. H. Low, Lt. D. P. Wilson, Oct. 12th; Sec. Lt. G. W. Yallop, Oct. 13th; Lt. J. L. Bell, Sec. Lt. F. W. C. Body, Lt.-Col. the Hon. A. S. Byng, D.S.O., Lt. (actg. Capt.) L. Clarke, A.F.C., Capt. E. G. Cleverly, Lt. T. L. Coates, D.F.C., Lt. F. G. Davies, Maj. I. H. B. Hartford, A.F.C., Lt. J. L. Mayer, D.F.C., Lt. R. J. Thompson, Lt. E. T. Treglown, Lt. R. Turner, Oct. 14th; Sec. Lt. R. Bower, Sec. Lt. T. Burton, Lt. D. P. Davidson, Lt. C. Davies, Oct. 15th; Sec. Lt. (Hon Lt.) R. A. Edminson, Oct. 17th; Lt. (Hon. Capt.) A. F. B. Broadhurst, Oct. 18th; Sec. Lt. H. G. Souchon, Oct. 19th; Sec. Lt. N. R. Lightbody, Oct. 22nd

Lt (actg. Capt.) L. J. Mann, M.C. (Lt., R.A.S.C.), relinquishes his commn on account of ill-health, and is permitted to retain the rank of Capt., Feb. 8th (substituted for notification in the "Gazette" of Feb. 7th).

Lt. A. C. E. Gregory relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 18th.

Lt. W. J. H. Courtis (Lt., Devon R.) resigns his commn., Oct. 24th.

Sec. Lt. H. P. Brumell relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, July 12th (substituted for notification in the "Gazette" of Sept. 30th).

Sec. Lt. (Hon. Lt.) C. C. Loretto is antedated in his appointment as Sec. Lt. (Hon. Lt.) (O.), Aug. 8th, 1918.

The initials of Lt. L. A. Tapper are as now described, and not "L. J. A.," as stated in the "Gazette" of Sept. 5th.

The notification in the "Gazette" of Oct. 10th concerning P.F.O. A. J. Mantle, D.F.C., is cancelled.

The notification in the "Gazette" of April 29th concerning Sec. Lt. F. H. Snoxell is cancelled. ("Gazette" notice of May 30th to stand.)

The notification in the "Gazette" of May 2nd concerning Sec. Lt. S. Pile is cancelled.

The notification in the "Gazette" of July 18th concerning Sec. Lt. N. Sillars is cancelled.

The notification in the "Gazette" of Aug. 12th concerning Sec. Lt. (Hon. Lt.) H. B. Kennedy is cancelled.

The notification in the "Gazette" of Sept. 5th concerning Lt. S. Hill is cancelled.

The notification in the "Gazette" of Sept. 16th concerning Lt. A. McD. Dunlop is cancelled.

The notification in the "Gazette" of Oct. 3rd concerning Lt. C. H. Archer is cancelled.

The notification in the "Gazette" of Oct. 15th, 1918, concerning F./Cdt. R. S. Nicholl is cancelled.

The notification in the "Gazette" of May 21st, 1918, concerning Sec. Lt. E. H. Bullen is cancelled.

The notification in the "Gazette" of June 24th concerning Lt. E. L. Sutcliffe is cancelled.

The notification in the "Gazette" of Oct. 17th concerning Sec. Lt. W. W. Smith is cancelled.

Administrative Branch.—Sec. Lt. T. F. T. M. Williams to be Lt., June 13th.

Transferred to unempld list:—Sec. Lt. W. R. Souter, Feb. 25th (substituted for the notification in the "Gazette" of April 4th, wherein this officer was shown under "Flying Branch"); Sec. Lt. J. Roberts, March 7th; Sec. Lt. W. R. Thornton, May 1st; Sec. Lt. J. Martin, June 2nd (substituted for the notification in the "Gazette" of July 4th); Lt. H. W. Piper, June 30th; Sec. Lt T. N. Drake, Aug. 20th; Sec. Lt. A. D. Miller, Sept. 1st; Sec. Lt H. Kaye, Sept. 2nd; Lt. H. W. Eyton-Jones, Sept. 6th; Lt. C. W. Dyer, Sept. 11th; Sec. Lt. C. J. Richardson, Sept. 14th; Lt. H. H. Jones, Sept. 17th; Sec. Lt. A. A. M. Durrant, Capt. F. Rooks, Sept. 18th; Sec. Lt. E. R. Tremlett, Oct. 7th; Lt. W. H. Bundock, Lt. R. M. Ward, Oct. 9th; Sec. Lt. C. E. Briant, Lt. L. E. Anstey-Bennett, Sec. Lt. F. W. McClive, Capt. A. F. Marlowe, Lt. W. J. Matthews, Oct. 10th; Lt. A. Colling, Sec. Lt. R. H. Hollingdale, Lt. F. E. Lefevre, M.C., Lt. D. Menzies, Sec. Lt. C. E. Shirley, Oct. 11th; Sec Lt. W. H. Jones, Oct 12th; Sec. Lt. J. McGilley, Oct. 13th; Lt. (actg. Capt.) J. E. B. Cochrane, Oct. 14th; Lt. L. T. Wire, Oct. 15th; Capt. R. Hunter, Oct. 16th; Lt. M. J. V. Blood-Smyth, Oct. 19th.

~~Lt.~~ D. H. Rudd relinquishes his commn. on account of ill-health (contracted on active service), and is permitted to retain his rank, Oct. 2nd.

Sec. Lt. F. Nicolls relinquishes his commn. on account of ill-health, May 20th (substituted for notification in "Gazette" of Jan. 31st).

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—I. C. Bannister, July 1st (substituted for notification in "Gazette" of July 1st); G. B. Blake (contracted on active service), Sept. 28th.

The surname of Flt. Lt. F. F. Loyd is as now described, and not "Lloyd," as stated in "Gazette" of Sept. 26th.

The notification in "Gazette" of Sept. 19th concerning Sec. Lt. G. B. Blake is cancelled.

Technical Branch.—Pilot Officers to be Flying Officers, without the pay and allowances of that rank:—H. E. Davies, F. W. Todd, Oct. 1st.

Lt. C. L. Cleburne (Lt., Hampshire Aircraft Park, T.F.) relinquishes his commn. on ceasing to be empld., March 9th.

Transferred to unempld. list:—Lt. F. Gilbert, Feb. 21st; Capt. A. C. Smith, April 9th; Sec. Lt. A. W. Tipp, April 16th; Lt. J. E. Macloghlin, April 19th; Sec Lt. G. Lee, May 29th; Lt. B. C. Woodward, Aug. 2nd; Sec. Lt. J. V. Martyn, Sept. 2nd; Lt. W. R. Kells, Sept. 4th; Sec. Lt R. S. MacCormac, Lt. J. H. Mackie, Sec. Lt. W. Marshall, Sept. 8th; Lt. S. S. Dixon, Sept. 10th; Lt. G. B. Monkman, Sept. 14th; Sec. Lt. J. O. Miles, Sept. 15th; Sec. Lt. (Hon. Lt.) E. W. C. Catling, Sept. 16th; Sec. Lt. F. R. Johnson, Capt. B. G. McCormick, Sept. 20th; Lt. R. M. Weaver (substituted for notification in "Gazette" of Oct. 7th, wherein this officer's rank was shown as Sec. Lt.), Lt. C. E. Channing, A.F.C., Sept. 22nd; Capt. H. S. Brown, Sec. Lt. J. J. B. Campbell, Sec. Lt. J. R. Johnson, Sept. 23rd; Lt. P. T. Creswell, Capt. O. H. Mason, Sept. 27th; Lt. J. Butterfield, Sept. 28th; Lt. E. S. Cohen, Oct. 7th; Sec. Lt. W. Littlejohn, Oct. 8th; Lt. J. A. Atkinson, Sec. Lt. W. B. Chippendale, Sec. Lt. E. G. Pugh, Maj. F. C. Rowe, Oct. 9th; Sec. Lt. B. D. Anderson, Lt. T. V. A. Davison, Sec. Lt. A. T. Davis, Sec. Lt. P. A. Edmonds, Sec. Lt. C. H. Hare, Sec. Lt. (Hon. Lt.) R. Nicolle, Lt. A. H. Prior, Lt. A. J. O. Spiers, Capt. B. O. Warren, Oct. 10th; Lt. N. A. Ayres, Lt. H. Berridge, Lt. A. R. Butler, Sec. Lt. E. L. Hocking, Sec. Lt. R. J. M. Platt, Oct. 11th; Lt. S. Beeby, Sec. Lt. A. Elson, Oct. 12th; Maj. T. G. Clarson, Sec. Lt. W. H. Sayer, Sec. Lt. J. J. Shuley, Oct. 13th; Lt C. W. Bentley, Lt. F. A. Bracher, Sec. Lt. F. Calnan, Lt. A. H. Desforges, Capt. C. G. More, Sec. Lt. F. W. Osborne, Sec. Lt. V. P. Pereth, Oct. 14th; Lt (actg. Capt.) B. R. Bostock, Sec. Lt. C. M. Byham, Capt. K. D. Doyle, Oct. 15th.

Lt. E. A. B. Carter (Mddx R., T.F.) relinquishes his commn. on account of ill-health (contracted on active service), and is granted the rank of Capt., Jan 25th (substituted for notification in the "Gazette" of Jan. 24th).

The initials of Lt. R. J. Murchison are as now described, and not "R. T.," as shown in "Gazette" of Sept. 30th.

Medical Branch.—Transferred to unempld list:—Lt. L. Patchett, Feb. 24th; Lt W. J. Lytle, Oct 6th.

Women's Royal Air Force.—Dep. Admin. V. Dening reverts temporarily to rank of Asst. Admin. on ceasing to be empld. as Dep. Admin, Sept. 26th

Asst. Admin (actg. Dep. Admin.) V. M. Orrock reverts to substantive rank on ceasing to be empld. as Dep Admin., Oct. 1st.

Asst. Admin. (actg. Dep. Admin.) M. C. Grantham reverts to substantive rank on ceasing to be empld. as Dep. Admin., Oct. 1st.

Dep. Admin. (actg. Admin.) D. C. Muir, M.B.E., reverts temporarily to rank of Asst. Admin. on ceasing to be empld. as Dep. Asst Comdt., Oct. 1st.

The following officers relinquish their appts. on account of ill-health:—Deputy Administrators.—Mrs. G. E. Dickinson, Sept. 16th; Mrs. J. B. Bowmer, Sept. 26th; E. M. P. Grubb, Sept. 29th.

The following officers relinquish their appts. at their own request:—Asst. Commandant II.—Mrs. M. Edwards, O.B.E., Oct. 6th.

Asst. Administrators.—M. G. Ilwaine, June 12th; Mrs. I. M. Banks, Aug. 23rd; E. M. Phillips (actg Dep. Admin.), Sept. 16th; G. Vernon (Dep. Admin., actg.) Sept. 18th; J. K. Mountford-Smith (actg. Dep. Admin.), Sept. 19th; I. M. Lea, Sept. 24th; Mrs. H. H. M. Shepstone, Mrs. E. H. Foster, Sept. 26th.

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The following officers relinquish their appts. on completion of service:—Administrators.—P. A. Taylor, Aug. 29th; Mrs. L. M. Parker, Sept. 15th; F. G. Hunter, Sept 23rd; Mrs. C. T. Bayley (D.A.C.), M.B.E., Sept. 30th.

Dep. Administrators.—E. K. Alexander, Sept. 19th; B. Brentnall, Sept. 25th.

Asst. Administrators.—R. H. Gibson, Sept 11th; Mrs. N. Allen, Sept. 13th; B. M. Howard, Sept. 16th; D. V. Carter, Sept. 17th; Mrs. N. A. M. Barnett (actg. Dep. Admin.), Sept. 19th; N. C. Pemberton, Sept. 20th; M. Panniers, Sept. 22nd; E. C. Edwards (actg. Dep. Admin.), M. E. F. Machin, Sept. 23rd; M. M. Anderton, J. V. Campbell, Sept. 24th; Mrs. F. Mackay, K. Jowett, F. M. H. Whitefield, E. M. Rabone, D. F. Forbes-William, Sept. 26th; N. M. Foxall, Sept. 29th; C. B. Collas, Sept. 30th; Mrs. J. Longhurst, Oct. 1st; E. M. Pasley, Oct. 7th; C. H. Service, Oct. 8th; H. H. Butcher, M. Farmer, M. Pearce (actg. Dep. Admin.), Oct. 10th; Mrs. A. G. Leeson, Oct. 11th.

MEMORANDA.—The following Oversea Cdts. are granted temp. commns. as Sec. Lts. with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases:—9438 T. S. Duncanson, 24548 D. H. Strutt.

The following Temp. Hon. Lts relinquish their commns. on ceasing to be empld.:—J. A. Foster, Sept. 2nd; G. G. Bradshaw, H. R. Fulford, Sept. 16th; E. Johnson, C. F. Woodgate, Oct. 16th; T. Kimpton, Oct. 18th.

Lt. (actg. Capt.) W. J. C. Kendall, M.C., is transferred to unempld. list, from (S.O.), Oct. 9th.

Lt.-Col. C. F. de S. Murphy, D.S.O., M.C. (Maj., R. Berks R.), resigns his commn., and is granted the hon. rank of Brig.-Gen., Sept. 17th. (Substituted for notification in the "Gazette" of Sept. 16th.)

Capt. (actg. Maj.) W. T. Blake (Oxon and Bucks L.I.) relinquishes his commn. on account of ill-health, and is granted the rank of Maj., May 13th. (Substituted for notification in the "Gazette" of May 27th.)

The surname of 12767 Cadet M. M. Ffinch is as now described, and not "Finch," as stated in the "Gazette" of Oct. 7th.

The initials of Flt. Lt. H. R. Kavanagh, M.B.E., are as now described, and not "H. B.," as stated in the "Gazette" of Oct. 17th.

The notification in the "Gazette" of July 18th concerning 19916 Cadet H. Simpson is cancelled.

AIR MINISTRY, Oct. 31st.

R.A.F.—The following promotions are made:—Air Commodores—Group Capt. H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C.; Group Capt. E. M. Maitland, C.M.G., D.S.O., A.F.C., Aug. 4th; Air Commodore A. V. Vyvyan, C.B., D.S.O., to be Air Vice-Marshal, Oct. 10th.

Air Commodores.—Group Capt. (actg. Air Commodore) B. H. H. Cooke, C.M.G., C.B.E., D.S.O., relinquishes the grading for pay and allowances as Air Vice-Marshal, Oct. 18th.

FLYING BRANCH.—Lt.-Col. C. F. de S. Murphy, D.S.O., M.C., to be Lt.-Col. (A.), from Group Comdr., June 5th.

Flt. Lt. H. A. Tweedie to be Flt. Lt. (A. and S.), from (S.O.), Sept. 15th.

Lt. C. G. Ferrell is graded for purposes of pay and allowances as Capt. whilst empld. as Capt. (A. and S.), June 21st.

Lt. I. L. Roy to be Lt. (A.), from (T.), June 1st, 1918.

Sec. Lts. to be Lts.:—J. H. Manicom, M.C., Nov. 30th, 1918 (since demobilised); W. C. Treen, M.C., D.F.C., April 1st (since relinquished commn).

Pilot Officers to be Flying Officers:—W. Smith, Oct. 1st; W. G. Freel, Oct. 24th.

P.F.O. C. E. Usher-Somers (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (A.), Aug. 14th, 1918; 305019 Flight Cadet A. Wilson is granted a temp. commn. as Sec. Lt. (O.), Aug. 26th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. S. C. P. Slattery (Lt., Ox. and Bucks L. Inf.), Sept. 11th; Sec. Lt. J. L. Fletcher (Sec. Lt., Dorset R.), Oct. 13th; Lt. H. Kirby (Lt. E. Kent R.), Oct. 15th; Lt.-Col. A. C. E. Marsh (Maj., R.F.A.); Capt. C. C. Waddington (Capt., Hamp. R.); Lt. (Hon. Capt.) T. R. Wells, M.C. (Capt., Punjabis), Oct. 16th; Maj. R. G. H. Murray, M.C. (Maj., Gurkha Rifs.), Oct. 21st; Capt. R. H. Shears (Capt., Shrops. L.I.); Lt. C. E. Jessell (Lt., Wilts. R.), Oct. 22nd; Maj. J. E. Hume, D.S.O. (Capt. Conn. Rangers), Oct. 23rd; Lt. E. P. Manson, M.C. (Lt., Midd'x. R.), Oct. 25th.

Transferred to unempld. list:—Sec. Lt. S. Lestrade, Sec. Lt. N. H. Petrimoulx, Sec. Lt. J. W. Pilgrim, Lt. W. Sidebottom, Sec. Lt. E. G. Smith, Feb. 1st; Lt. C. H. Smith, March 13th; Lt. F. G. Pym, April 7th, Sec. Lt. W. J. Goddard, April 8th; Sec. Lt. D. Smith, April 16th; Lt. G. Sevell, April 22nd; Sec. Lt. (Hon. Lt.) W. Taylor, April 23rd; Lt. L. C. R. Alexander, Lt. I. D. Cameron, Lt. A. M. Kinnear, M.C., May 1st; Sec. Lt. G. E. Warren, May 18th; Sec. Lt. W. A. Spence, May 20th (substituted for notification in the "Gazette" of May 25th); Lt. I. Holliday, May 31st (substituted for notification in the "Gazette" of June 27th); Sec. Lt. R. L. Palmer, June 2nd; Lt. H. Shaw, June 5th (substituted for notification in the "Gazette" of Aug. 22nd wherein this officer was shown under Admin. Branch); Lt. E. F. Erzinger, July 14th; Lt. E. R. W. Millar, July 29th (substituted for notification in the "Gazette" of Aug. 1st); Lt. J. V. Wischer, Aug. 19th; Sec. Lt. (Hon. Lt.) J. Clarke, M.C., Sept. 9th; Sec. Lt. D. J. Ancott, Lt. G. R. Stafford, Sept. 11th; Sec. Lt. F. R. Salomon, Sept. 12th; Capt. F. G. Andreae, A.F.C., Sept. 13th; Lt. H. F. S. Kilby, Sept. 22nd; Lt. P. D. Kirk, Sept. 23rd; Lt. L. Rawlinson, Sept. 27th; Sec. Lt. W. Saunders, Sec. Lt. S. S. Scott, Sept. 28th; Lt. G. F. Manning, Lt. E. R. Watt, Sept. 29th; Capt. M. Hunter, Oct. 7th; Lt. C. G. Ferrell, Lt.-Col. F. M. Roxby, O.B.E., D.F.C., Oct. 8th; Lt. J. H. Forbes, Lt. G. B. Holmes, Lt. A. T. Isbell, Lt. W. B. Kelly, Lt. W. C. Marsh, Oct. 9th; Lt. B. Archer, Sec. Lt. H. W. Bush, Lt. A. C. Collier, Sec. Lt. V. C. Cordingley, Lt. H. Etterley, Lt. J. W. Foreman, D.F.C., Lt. A. H. Carland, Lt. W. T. Gilson, Sec. Lt. C. C. Graham, Sec. Lt. R. L. Henning, Lt. E. A. Hodgson, Lt. D. G. MacKenzie, Lt. E. C. Netherton, Lt. F. R. Oddy, Lt. G. F. Freear-Read, Sec. Lt. H. J. Roberts, Lt. S. Seed, Lt. C. B. S. Spackman, D.F.C., Capt. A. C. Stevens, Capt. E. J. Travers, Oct. 10th; Sec. Lt. J. Gargan, Lt. J. N. Gladish, Lt. A. C. Godfrey, Sec. Lt. C. M. Hill, Maj. J. L. Jackson, M.C., Lt. J. H. Mainwaring, Lt. F. H. Rowe, Lt. A. N. Stratton, Sec. Lt. R. Stuart, Oct. 11th; Lt. E. E. Arnold, D.F.C., Sec. Lt. J. Drake, Sec. Lt. (Hon. Lt.) J. Fenwick, Lt. G. Gilham, Lt. P. D. Robins, Lt. E. H. Russell, Lt. C. R. Smythe, Capt. H. F. Stackard, Oct. 12th; Lt. P. D. Baker, Lt. J. C. Joynt, Lt. J. C. Langford, Sec. Lt. C. M. Pavey, Lt. R. D. S. Sparkes, Lt. L. A. Wilkins, Oct. 13th; Lt. W. P. Delamere, Lt. C. A. M. Furlonger, Sec. Lt. J. A. Hinchcliffe, Lt. F. J. Islip, Sec. Lt. A. E. Roberts, Lt. C. S. Sivil, Oct. 14th; Lt. D. S. Allison, Lt. W. E. Holland, Lt. L. Kent, Sec. Lt. E. F. Pittaway, Lt. R. W. Thrower, Oct. 15th; Lt. E. Belbin, Sec. Lt. G. A. Body, Lt. H. G. Davis, D.F.C., Sec. Lt. A. H. Griffiths, Lt. C. H. Harwood, Lt. R. W. Parkinson, Lt. A. F. Scroggs, Lt. (Hon. Capt.) R. L. Thomas, Lt. G. E. Tugwell, Oct. 16th; Sec. Lt. S. Barker, Capt. H. Brokensha, Sec. Lt. C. W. Joughin, Lt. (Hon. Capt.) F. T. R. Kempster, D.F.C., Capt. L. G. Scott, Sec. Lt. A. Shepherd, Oct. 17th; Lt. C. Allday, Sec. Lt. H. L. Bellamy, Sec. Lt. H. O. Brown, Lt. F. G. C. Dickinson, Capt. R. G. Gould, M.C., Sec. Lt. R. L. Seymour, Sec. Lt. T. H. Swann, Oct. 18th; Lt. N. McC. Anderson, Lt. A. W. Birch, Oct. 19th; Sec. Lt. P. F. Bovingdon, Sec. Lt. C. J. T. Boys, Sec. Lt. (Hon. Lt.) H. B. Elwell, Sec. Lt. A. M. Verity, Lt. F. Woolley, D.F.C., Oct. 22nd; Lt. S. W. Carline, Capt. (actg. Maj.) C. R. Carr, Sec. Lt. A. A. B. Chipper, Sec. Lt. W. A. Hammerton, Lt. C. D. Skinner, Sec. Lt. J. E. Wooding, Oct. 22nd; Lt. E. C. Slaght, Oct. 29th.

The following Capts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—D. G. Young, Oct. 24th; J. M. Heap, Oct. 27th.

Capt. H. Hemming, A.F.C. (Lt., Worc. R.), resigns his commn., Nov. 1st.

Lt. D. E. P. Chaplin (Lt., R.H., R.F.A.) resigns his commn., Sept. 10th (substituted for notification in "Gazette" of Sept. 9th).

Lt. O. C. Holleran relinquishes his commn. on account of ill-health caused by wounds, and is granted the rank of Capt., Sept. 26th.

Lt. J. C. Wilson, D.F.C., relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 23rd.

Sec. Lt. F. B. A. Punnett relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Sept. 28th.

Sec. Lt. (Hon. Lt.) C. J. Swatridge (Lt., Notts. and Derby R.) resigns his commn., Oct. 25th.

The initials and rank of Lt. W. E. B. Holland are as now described, and not "Lt. (actg. Capt.) W. E. Holland," as stated in "Gazette" of May 6th.

The notification in "Gazette" of April 1st concerning Sec. Lt. (Hon. Lt.) G. J. Williams is cancelled (notification in "Gazette" of April 4th to stand).

The notification in "Gazette" of April 8th concerning Lt. W. J. Goddard is cancelled.

The notification in "Gazette" of June 6th concerning Sec. Lt. R. J. Palmer is cancelled (notification in "Gazette" of Aug. 29th to stand).

The notification in "Gazette" of July 29th concerning Lt. W. Adamson is cancelled.

ADMINISTRATIVE BRANCH.—Wing Comdr. A. C. H. MacLean to be Wing Comdr., from (S.O.), Oct. 7th.

Lt. J. B. V. Clements, D.F.C., to be Lt., from (O.), Nov. 23rd, 1918 (substituted for notification in "Gazette" of Feb. 4th).

Sec. Lt. I. Holliday to be Lt. (since demobilised), May 8th.

Pilot Officer (Hon. Flying Officer) L. Miller to be Pilot Officer (Hon. Flying Officer), from (S.O.), Sept. 24th.

Transferred to the unempld. list:—Sec. Lt. J. S. McLay, Feb. 4th; Sec. Lt. S. D. Connolly, March 30th; Sec. Lt. W. W. Smith, July 12ht; Sec. Lt. H. V. N. Bankes, Sept. 26th; Lt. G. Knight, Sec. Lt. S. A. Saunders, Sept. 29th, Sec. Lt. F. G. Simpkins, Oct. 7th; Sec. Lt. L. E. Falla, Sec. Lt. E. L. Henry, Lt. R. T. Kelly, Oct. 9th; Sec. Lt. W. F. Blackman, Lt. T. H. Butler, Lt. H. E. K. Eccles, M.C., Lt. H. W. Holmes, Sec. Lt. E. P. Pearce, Lt. J. Saunders, Oct. 10th; Lt. G. A. Hutchinson, Sec. Lt. (Hon. Maj.) R. E. Pole, Oct. 11th; Sec. Lt. F. H. M. Francis-Hawkins, Sec. Lt. H. Silvester, Lt. R. S. Swanton, Oct. 12th; Sec. Lt. D. J. Evans, Sec. Lt. G. R. La Cecilia, Lt. W. O'Toole, Sec. Lt. J. Sherowitz, Oct. 14th; Lt. (Hon. Capt.) R. Elphick, Capt. W. F. Routley, Capt. E. R. Slaney, Sec. Lt. (Hon. Lt.) E. A. Jones-Stewart, Oct. 15th; Lt. (Hon. Maj.) A. A. Bridgewater, Lt. (Hon. Capt.) E. Codyre, Sec. Lt. A. T. Guinevan, Lt. A. G. Hearnden, Sec. Lt. C. E. Hutchence, Lt. H. A. Plater, Lt. G. Thomson, Sec. Lt. D. A. Willmott, Oct. 16th; Capt. A. H. W. Wall, O.B.E., M.C., Oct. 18th; Lt. H. Shaw, Oct. 19th; Sec. Lt. H. Sharkey, Lt. C. J. Sharpe, Oct. 22nd; Lt. A. D. Tatham, Oct. 24th.

Capt. (actg. Maj.) W. J. King (R. Muns. Fus.) relinquishes his commn. on account of ill-health (caused by wounds), May 16th.

Capt. P. G. Pullon (Ches. R., T.F.) relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Oct. 20th.

Sec. Lt. T. Collins relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 23rd.

The initials of Lt. F. W. Alderton are as now described, and not "W. F.," as stated in "Gazette" of Feb. 14th.

The notification in "Gazette" of Oct. 3rd concerning Lt. J. R. M. Tweddell is cancelled ("Gazette" of July 29th to stand).

TECHNICAL BRANCH.—Lt. M. P. Mullery to be actg. Capt. whilst empld. as Capt., Grade (A), from Aug. 28th, 1918, to April 30th.

The following Lts. are graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A):—M. P. Mullery, from May 1st to May 15th.

H. A. Adams, from (S.O.), May 13th (substituted for notification in the "Gazettes" of May 30th and July 15th).

Lt. I. L. Roy to be Lt., Grade (B), from (A), April 4th, 1918 (substituted for notification in the "Gazette" of May 7th, 1918).

Lt. F. C. Rayson to be Lt., Grade (B), from A'ship, July 17th (substituted for notification in the "Gazette" of Sept. 5th).

Sec. Lts. to be Lts.:—P. S. Riach, April 15th, 1918 (without pay and allowances of that rank prior to May 1st, 1918); C. C. Parrott, Jan. 29th (without pay and allowances of that rank prior to March 13th) (substituted for notification in the "Gazette" of April 4th); Sec. Lt. (Hon. Lt.) C. J. Poole is graded for purposes of pay and allowances as Lt. whilst empld. as Lt., Grade (B), from May 1st to July 31st.

Sec. Lts. to be Lts. without the pay and allowances of that rank:—J. Butcher, G. G. Hargrave, April 2nd, 1918.

Sec. Lt. S. Graves to be Sec. Lt., Grade (B), from (Ad.), June 7th.

Transferred to the unempld. list:—Sec. Lt. H. E. Brain, Sept. 13th (substituted for notification in the "Gazette" of Sept. 30th); Capt. F. H. Burgess, Sept 15th; Lt. J. W. Askham, Sept. 17th; Lt. M. V. Barton, Sept. 25th; Sec. Lt. J. O. H. Norris, Sept. 27th; Sec. Lt. H. J. Kibble, Capt. G. Sykes, M.B.E., Sept. 28th; Lt. R. M. Baird, Sept. 30th; Capt. H. G. Harrison, Oct. 8th; Maj. S. T. Baker, Sec. Lt. A. Shepheard, Oct. 9th. Sec. Lt. (Hon. Lt.) J. C. Boughton, Sec. Lt. W. S. Hay, Lt. M. E. Holroyd, Sec. Lt. R. H. Nicol, Lt. W. B. Rayner, Lt. H. F. Wilkinson, Oct. 10th; Sec. Lt. J. A. Anderson, Lt. A. W. Armstrong, Sec. Lt. A. A. Gardner, Sec. Lt. (Hon. Lt.) H. Hellier, Capt. J. Honey, Lt. P. H. Paul, Capt. W. H. B. Sandes, Lt. (Hon. Capt.) C. Shears, Lt. C. R. Heber-Trevor, Oct. 11th; Capt. G. E. Lucksted, Maj. R. Orme, Oct. 12th; Capt. H. R. Lecomber, O.B.E., Lt. T. C. Martin, Lt. J. G. Peacock, Oct. 13th; Lt. L. E. Heather, Sec. Lt. E. S. Olney, Oct. 14th; Lt. C. A. Brook, Sec. Lt. H. L. Vahey, Oct. 15th; Lt. (actg. Capt.) J. R. Frankish, M.B.E., Sec. Lt. M. Thompson, Lt. W. S. Vale, Sec. Lt. H. S. Whitley, Capt. C. W. Willcox, Oct. 16th; Capt. T. J. Hamp, Capt. H. L. Hill, Capt. W. H. Sharpe, Capt. R. C. Shortt, Lt. C. J. Strother, M.B.E., Oct. 17th; Lt. T. McI. Mackay, Sec. Lt. J. E. Tyrrell, Maj. S. M. Cleverley, Oct. 18th; Capt. C. Fairbairn, Lt. N. V. Harle, Capt. R. Stephenson-Peach, M.B.E., Sec. Lt. F. C. Warren, Oct. 21st; Sec. Lt. R. C. Carline, Capt. J. K. Fryer-Smith, Oct. 22nd; Lt.-Col. H. Burchall, D.S.O., Lt. J. R. Shanks, Sec. Lt. (Hon. Lt.) A. E. Thorne, Lt. F. Tingle, Sec. Lt. E. T. E. Welburn, Oct. 23rd.

Capt. H. Lancaster (Norf. R.) relinquishes his commn. on account of ill-health, Oct. 20th.

The notification in "Gazette" of April 29th concerning Sec. Lt. (Hon Lt.) R. W. V. Midlane is cancelled.

The notification in "Gazette" of June 3rd concerning Sec. Lt. (Hon. Lt.) R. W. V. Midland is cancelled.

The notification in "Gazette" of May 30th concerning Sec. Lt. G. R. Wills is cancelled.

MEDICAL BRANCH.—Transferred to the unempld. list:—Capt. R. B. Adams, Sept. 10th; Capt. (actg. Maj.) J. M. Kirkness, Sept. 13th; Capt. S G. Smith, Sept. 28th (ssubstituted for notification in "Gazette" of Oct. 10th, wherein this officer was shown as Lt.); Capt. A. D. Kennedy, Oct. 9th.

MEMORANDA.—The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—J. B. Mitchell, R. K Roberts, J. P. Tweedy, Sept. 16th; E. D. Burley, H. E. Portsmouth, H. E. G. Rowley, R. G. Sharp, Oct. 16th.

Transferred to the unempld. list:—Sec. Lt. P. Gent, from (S.O.), Capt J. E. A. Greatorex, from (S.O.), Lt. P. E. Stubbs, from (S.O.), Oct. 14th; Lt.-Col. F. R. Drake, C.B.E., from (S.O.), Capt. R. G. Mitchell, O.B.E., from (S.O.), Sec. Lt. E A. Cogswell, from (S.O.), Lt. J. E. D. Samuel, from (S.O.), Oct. 15th; Capt H. E. Weaver, from (S.O.), Oct. 16th; Capt. E. H. Haworth, from (S.O.), Oct 17th.

Sec. Lt. G. P. Pinney relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 8th.

The notification in the "Gazette" of Oct. 10th concerning temp. Hon. Lt. (Hon. Capt.) W. S. Kellar is cancelled.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

HARDMAN—BUSHBY.—The engagement is announced between Capt. Edmund Parfitt Hardman, D.F.C., son of the late John Bernard Hardman, of Edgbaston, Birmingham, and Mrs. Hardman, of 25, Fitzgeorge Avenue, London, and Betty, youngest daughter of the late Percival White Bushby and Mrs. Bushby, of Torquay, and youngest step-daughter of Capt. Arthur P. James, R.N., of Braydon Hall, Minety, Wiltshire.

BIRTH.

READ.—On Nov. 3rd, at 4, Grove Road, Frindsbury, Rochester, to the wife of Capt. S. J. Read, R.A.F. (Payr. Lt., R.N.)—a daughter.

MILITARY.

ENGAGEMENT.

CAVE—PIGGIN.—The engagement is announced of Capt. T. Walford Cave, M.C., R.F.A., R.A.F., eldest son of the Rev. Thomas Cave, vicar of St. James, Handsworth Wood, Birmingham, and Gwendolin Mary, only daughter of Herbert H. and Mrs. Piggin, of Hendon Hall, N.W.

AIR FORCE.

DEATH.

KNIGHT.—Capt. Gerald Fetherston Knight, R.A.F., who died at the R.A.F. Hospital, Eaton Square, on Oct. 30th, was the son of Robert Lynam and Lena Fetherston Knight, and the grandson of the Rev. Robert Knight, late of "Stanmore," Torquay. His death was caused by illness contracted while a prisoner in Germany. Some two years ago Capt. Knight escaped into Holland from the prisoners' camp at Strösken, and his experiences are described in his book "Brother Bosch," which was published recently.

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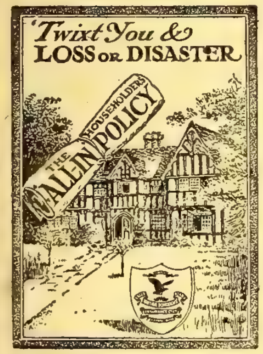

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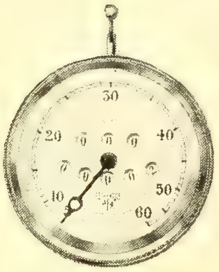

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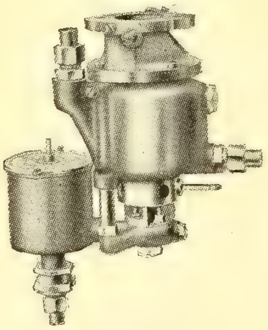

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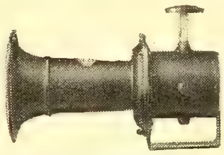

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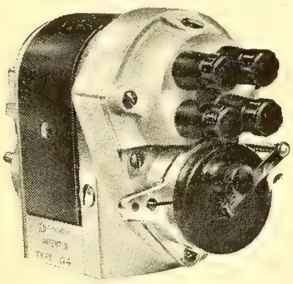

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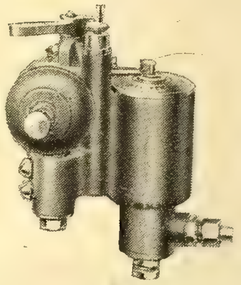

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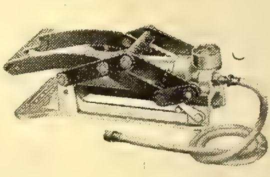

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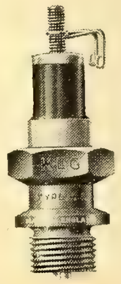

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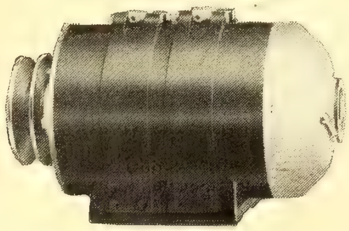

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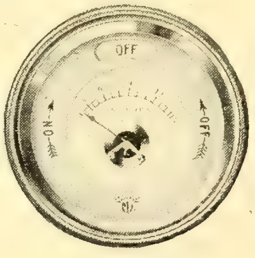
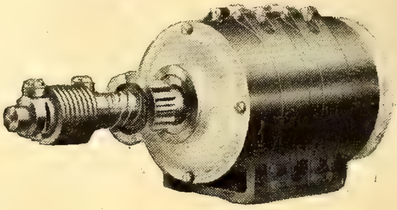


The Smith Bezel-Operated Switch



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NOTES ABOUT THE OLYMPIA MOTOR SHOW.

THE OLYMPIA MOTOR SHOW.

Many of the firms primarily engaged in aeronautical work are also interested in the automobile industry, and it is therefore thought desirable to publish the following notes for their information. The Motor Show which will open on Nov. 7th has additional interest in that it is the first to be held since 1913. The public have had little opportunity to estimate the progress made in motor engineering in the intervening years.

All the firms whose work is outlined in the following notes have during the war been engaged in aeronautics and have contributed ably to the successes attained by the Royal Air Force. The influence of the experience gained by these firms in aeronautical matters has served to add improvements to engines and car bodies which were already excellent in their way.

THE CULT OF PERFECTION.

As a schoolboy learnt to recognise a car by the radiator form, so a connoisseur in motor-carriages could tell, by the look of good taste and refinement in a coach body, the product of the Regent Carriage Co. It is, perhaps, natural that a firm, who had attained perfection in the old-fashioned craftsmanship handed down to them from the days when woodworking was a great British art, should be in a position at the outbreak of war to reorganise their extensive shops for the construction of aircraft and commence straightaway on production work.

Much of our success in the air has been due to the excellent work put into our machines by skilled artisans who have been accustomed to turn out fine jobs long before the A.I.D. existed. In the early days of the war, Mr. Myles Scarft, the able managing director of the Regent Carriage Co., realised that his firm with so experienced a staff would become a valuable asset to the nation, and, consequently, reorganised and expanded the works. As a result they were soon in a position to, and did turn out many types of aircraft, thousands of motor-lorries, ambulances and aeroplane trailers.

The firm manufacture all the metal parts for their work, and although the factory was replete with all types of woodworking machinery, every new labour-saving device placed on the market was carefully studied, and, if found satisfactory, it was installed within model workshops.

As an instance of their painstaking and thorough methods, the varnishing room can be taken as an example. The room contains the most approved and modern heating apparatus, and has a specially constructed floor so as to make it quite dustproof. Before a coach-body is varnished, both coach and room are thoroughly swilled down with a water-hose so as to remove every particle of dust. Even the workers must cover or remove all woollen articles of apparel before working in this room.

With their pre-war experience, and the result of the knowledge gained in building aircraft, where they have learned how bodies can be made lighter, stronger and more artistic in appearance, the British public can rely on the Regent Carriage Co. to hold its own against any competition, American or otherwise, and that it will contribute in keeping British industry and commerce in its premier position throughout the world.

THE ARROL-JOHNSTON CAR AT THE OLYMPIA SHOW.

The Arrol-Johnston Co. is exhibiting two models at the Olympia Show—a "Victory" car and a new 15.9 h.p. car.

The "Victory" model has a four-cylinder engine, with a bore of 80 mm. and a stroke of 140 mm. The R.A.C. rating is, therefore, 15.9 h.p. Unlike earlier cars made by this company, overhead valves are used. The lubrication is automatic. A four-speed gear-box is fitted.

Both brakes operate on the rear wheels. Detachable steel wheels are supplied.

The body is an open five-seater, in which the driver's seat is adjustable, so that comfort is obtainable without adjusting one's own body to the design of the car. A C.A.V. lighting and starting outfit is supplied.

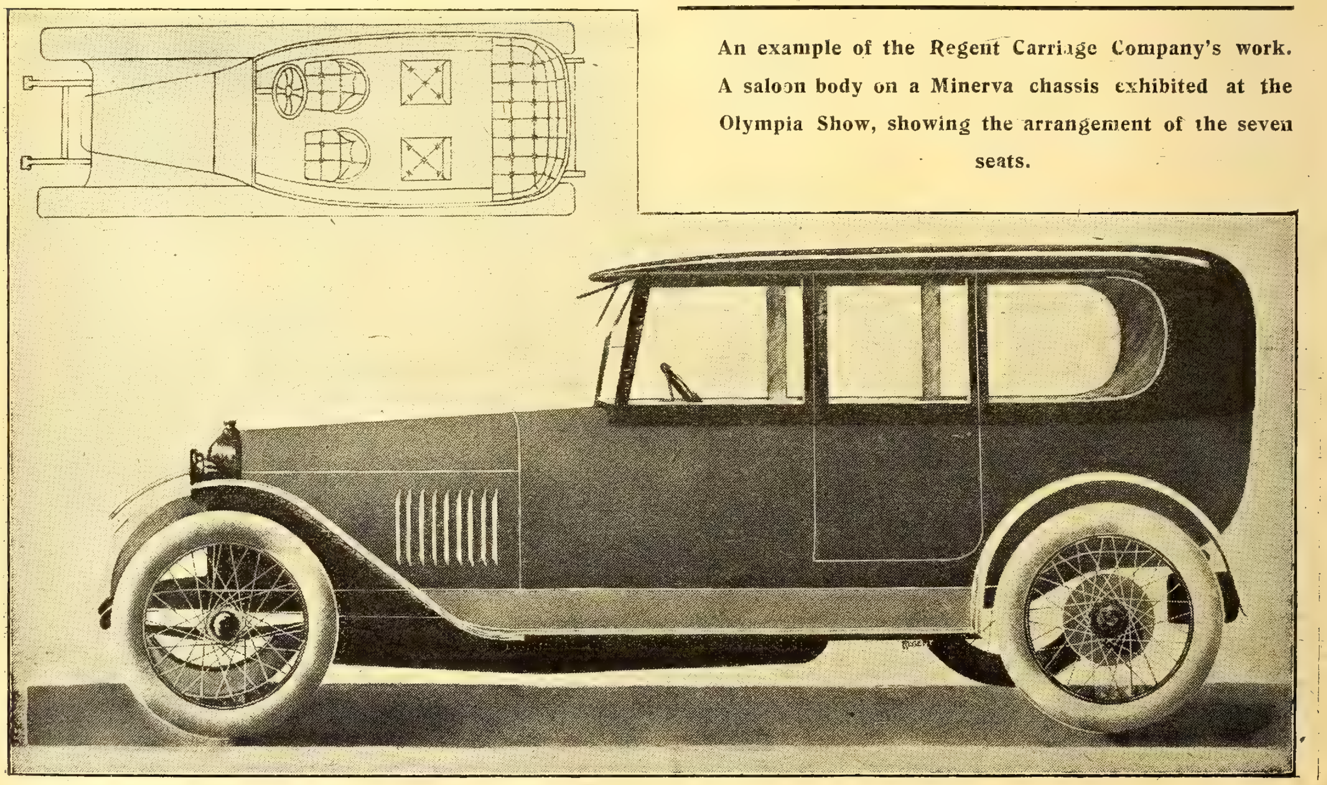
One of these cars has been supplied to H.R.H. the Prince of Wales, K.G.

The 15.9 h.p. model is that on which the Arrol-Johnston Co. has built its great reputation. The stroke is 20 mm. shorter than that of the "Victory" model, and overhead valves are not used. This car also has both brakes operating on the rear wheels. Electric lighting and starting are installed.

The Arrol-Johnston firm, which is one of the subsidiary companies of William Beardmore and Co., Ltd., has devoted its efforts during the war mainly to the building of aero engines, notably the B.H.P. Their experience in these matters cannot fail to have influenced the design and construction of their car engines.

THE SKOOTAMOTA.

At a recent board meeting of the Gilbert Campling Company, Ltd., the price of the A.B.C. Skootamota was considered, and it was decided to advance the selling price of each machine to 49 guineas.



An example of the Regent Carriage Company's work. A saloon body on a Minerva chassis exhibited at the Olympia Show, showing the arrangement of the seven seats.

THE EXHIBITS OF WILLIAM COLE AND SONS, LTD.

Another firm which during the war built aeroplanes for the Government is William Cole and Sons, Ltd. Their long experience of designing and building car bodies of the highest class naturally helped them in their war work in aeronautics. They have now returned to their original work, and three specimens of their skill will be exhibited at the forthcoming show. The description of these is given below.

A 30 h.p. Daimler (not the "light thirty") equipped with a standard Daimler-electric light and starting set, also wire wheels; fitted with Cole four-seated Cabriolet body. The body covers the full length of the chassis. It is capable of seating six people quite comfortably, although only constructed with one door each side. The seating capacity is of the usual Cole arrangement, namely, detachable spring cushion at back, and two Cole patent sliding chair seats, which are of specially light construction, with patent undercarriage to give freedom of movement. These are operated at the side by means of a small trigger lever. Two very light folding chairs are also supplied to seat two extra passengers, the chairs when not required folding away in pockets at the back of the chair seats.

The Cole patent hood opens or closes in one movement. A special point in this connection is the ease of action and general simplicity considering the length of body. In spite of this length the appearance is the same as the standard four-seater type of body, which is comparable to a comfortable two-seater. The hood is covered with the best enamel leather; the interior is trimmed with the usual quartered and inlaid choice woods highly polished. The instrument board is of polished wood to match. A V-shape wind screen is fitted, with top portion of each side made to open.

A 25 h.p. Vauxhall, fitted with standard model four-seated Cabriolet. The general details are as above, with the exception of the wind screen, which is of the straight pattern. A special feature of this body is the front pillars, which are of very light wood construction. It provides seating accommodation for four or five people, and is trimmed in grey leather and cloth.

A 25 h.p. Talbot with Cole Standard Imperial Limousine Landaulette body. Frameless windows are fitted throughout, and are raised or lowered by special lever arrangement instead of glass strings. The seating inside is for four or five passengers, and one passenger can sit in front beside the driver.

INSTRUMENTS AND ACCESSORIES.

Before the war, S. Smith and Sons (M.A.), Ltd., were known as the foremost Motor Accessories House, not only in Great Britain, but throughout the world. During the war their entire output consisted of instruments for aircraft, and they claim to have produced more aviation instruments for the British and Allied Governments than any other firm. As a result of the experience thus gained they have been enabled to perfect their vast organisation for the production of post-war accessories.

At the Olympia Motor Show, which opens to the public on the 7th inst., S. Smith and Sons will show on their stand (No. 345) specimens of their complete and up-to-date range of motor accessories, and will include examples of the following Smith products:—Speedometers, revolution indicators, air speed indicators, motor-clocks, pressure gauges, petrol tank gauges, carburetters, starting and lighting systems, electrical, mechanical and bulb horns, mascots, canteens and interior fittings, tyre pumps, double acting jacks, and also M-L magnetos, K.L.G. sparking plugs, Euk easy starters, etc., for which S. Smith and Sons (M.A.), Ltd., are the sole selling agents.

The M-L Magneto Syndicate, Ltd., for whom S. Smith and Sons are the sole selling agents, will have a separate stand (No. 346), where all types of M-L magnetos will be exhibited and demonstrated.

In pre-war days the usual practice was for a man to buy his car, and then fit all the accessories at additional heavy cost, but the post-war principle and ideal, which is showing itself in the policy of some motor manufacturers to turn out cars "ready-for-the-road," will tend to make motoring much more popular in the days to come.

Before the war 13 out of 14 British car manufacturers standardising instruments fitted the Smith equipment, and there is no doubt that most of the post-war cars will be similarly fitted and equipped.

Every article has undergone a complete change in design, its quality consistently improved, the finish and durability perfected, its operation made absolutely reliable and prolonged, expensive and independent tests have proved them worthy of the paramount place as post-war accessories.

THE ANGLO-AMERICAN OIL CO., LTD., AT OLYMPIA.

The Anglo-American Oil Co. will be exhibiting all their grades of motor spirit, illuminating and fuel oils at the Olympia Motor Show which opens on Nov. 7th.

The range includes Pratt's "Aviation" spirit as used by the R.34 on its East Fortune-Mineola-Pulham flight; Pratt's "Perfection" spirit, in the familiar green can, suitable for all classes of motor vehicles and motor boats; "Taxibus" spirit; Anglo's benzol; "Victory" spirit, a well-balanced petrol-benzol blend for all types of cars; "White Rose," "Royal Daylight," and "Crown Diamond" refined oils for domestic uses; Anglo's vaporising oil for oil-engines and agricultural tractors, as used at the Lincoln Tractor Trials in September, 1919; fuel oil for bunkers, Diesel engines, steam-raising, etc.; gas oil for motor-boats; and "Valor Perfection" oil for cooking and heating stoves.

THE GOOD COMRADE.

In connection with the proposed Australian flight the Sopwith Co. were desirous of obtaining certain information respecting the running of the Rolls-Royce "Eagle VIII" engine with which their machine is fitted, and so got into communication with the Aircraft Manufacturing Co., Ltd., as being the aircraft firm who have had most experience with that engine, and asked if they would have any objection to their seeing the log-books, etc., of the engines used in the successful London-Paris service. Brig.-Gen. Festing very courteously replied that they could have access to any figures or information that would be of any use to them respecting the running of the "Eagle VIII" under various conditions.

It is indeed encouraging to see that such a spirit of sportsmanship exists even in this age of commercialism, but General Festing was ever a good comrade.

A SPORTING VENTURE.

BATTLEFIELD BUREAU, LIMITED.—Private company registered Oct. 9th. Capital, £3,000 in 2,000 8 per cent. part preference shares of £1 each and 4,000 ordinary shares of 5s. each. To carry on the business of tourist and shipping agents, hotel proprietors, owners of aerial, motor and horse conveyances, etc. The subscribers are:

	Shares, Pref.	Ord.
G. F. Rothschild, D.S.O., M.C., Stock Exchange, E.C., stockbroker	10	10
W. R. Edgar, Blenheim Works, Hammersmith, W.	10	10
G. Kingsford, Seccondu, Gold Coast Colony, solicitor	5	5
F. Ratto, 4, Elm Court, Temple, E.C., barrister	5	5
H. H. Beamish, 175, Piccadilly, W., newspaper proprietor	10	10

Table "A" mainly applies. Qualification, £100. Solicitor: W. H. Behrens, 3, London Wall Buildings, E.C.

QUICK DELIVERY.

The following letter has been received:—

Sir,—One hears a lot of the advantages of sending mail of all description by air; presumably the greatest merit of the aerial post is its supposed speed. In two recent experiences of mine this has proved its very drawback. I will quote the latter as an example. My brother in Paris sent over a small gift by air, as he particularly wished it to reach me in the course of the next three days (this was 11 days ago). The first intimation I had as to its arrival was an incorrectly addressed letter from a (foreign) firm of carriers, stating that if I would be "good enough to forward them the small sum of 7s. 6d. for clearance they would forward the parcel at once." Knowing that my brother must have paid all charges, I sent a post-dated cheque, asking for particulars of the charges referred to. I did not date the cheque late enough, however, and after waiting to cash it they wrote and informed me that these were the "usual charges," and enclosed a Customs form for me to fill up. I filled this up and returned it, and four days later received another form to fill up before a Commissioner for Oaths (another 1s. 6d.!). This I did and returned the form. I have not even yet received the parcel!

If these are the "quick" methods adopted by our civil aviation firms no wonder civilian flying is not "booming"! I for one shall certainly send all my mail by post in future, on the ordinary land and sea routes.

Further to the disadvantages related above, in neither case was I able to obtain any information as to where my parcel could be found should I wish to collect it myself, and my inquiries as to the whereabouts of the aerodrome upon which it was landed were politely ignored!

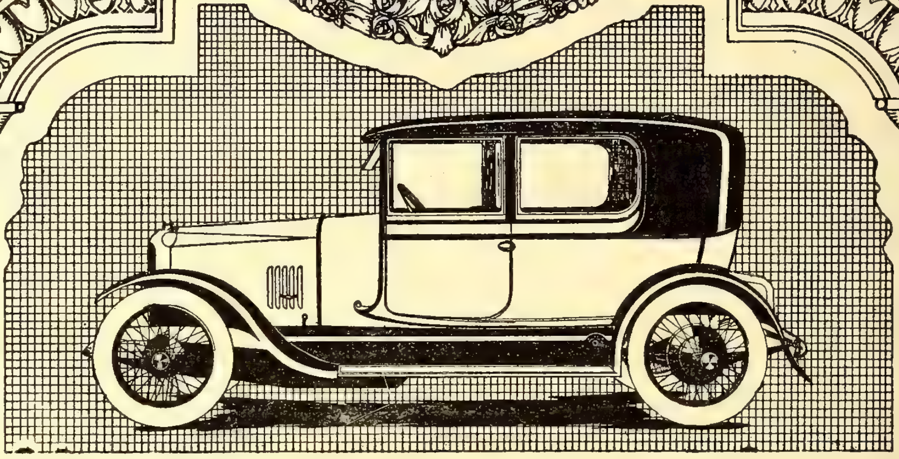
(Signed) "BOAZ."

[Further particulars concerning the circumstances related in this letter may be obtained by any aerial transport firm which knows that its methods of delivery are more rapid and reasonable than those mentioned.—ED.]

THE WHITEHEAD AERODROME CANTEEN CLUB.

The Feltham Justices on Oct. 27th made an order striking the Whitehead Aerodrome Canteen Club, Hanworth Park, off the list of registered clubs. An inspector stated that the firm had gone into bankruptcy, and that the works were closed.

D



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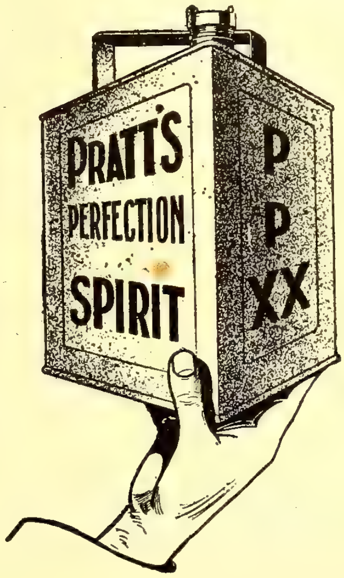

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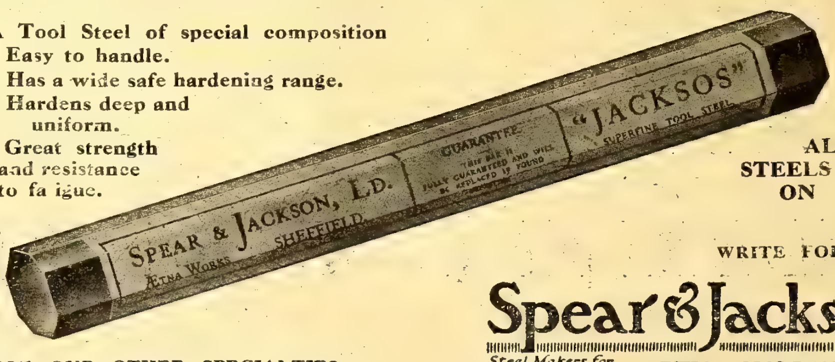

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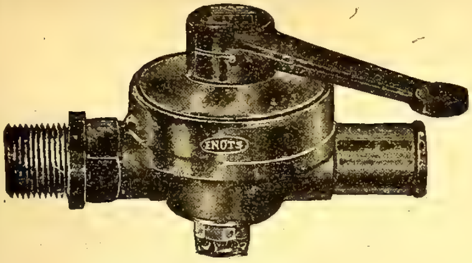

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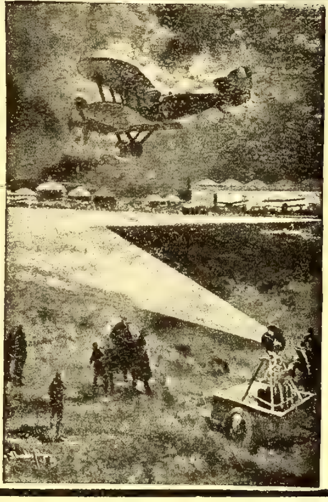

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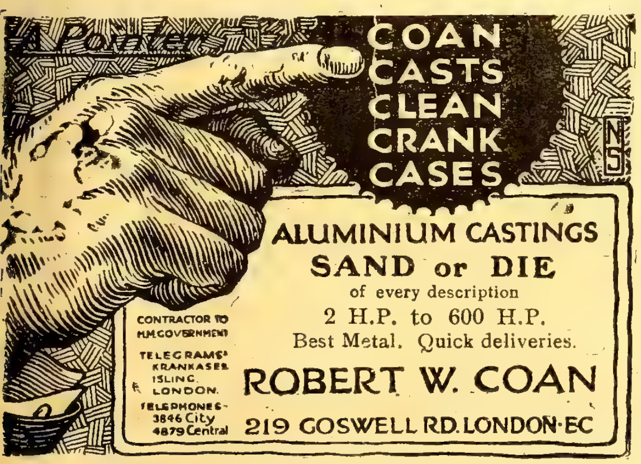

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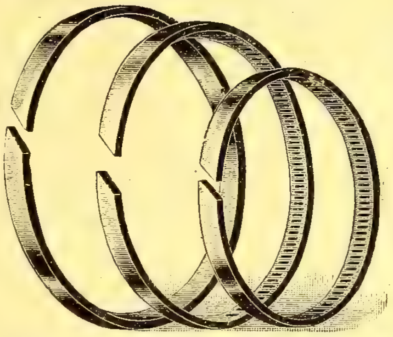

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ON ONE HUNDRED SQUADRONS.

It is an old saying that one has to go abroad to get news of things at home, and it is a very true saying. The latest example is a brief paragraph which appeared in the Paris paper "L'Auto" one day last week saying:—

"*Le maréchal Wilson demandait a maintenir cent escadrilles á 18 appareils; le budget etait de 65 millions de livres sterling. Le gouvernement a reduit les escadrilles á 51 et le budget á 25 millions de livres. Sur ces 51 escadrilles, 13 sont employees dans les camps d'instruction, et sur les 38 escadrilles actives qui restent, 18 sont prevues pour la defense de l'Angleterre et 20 pour le restes de l'empire.*"

Leaving out what the Government has done according to the second part of the paragraph, this being interpreted means that Field-Marshal Sir Henry Wilson, Chief of the Imperial General Staff, has demanded that the British Army shall have at its disposal, ready for war at any moment, one hundred squadrons of military aeroplanes, as distinct from seaplanes, ship-planes, torpedo-planes, flying-boats, and other varieties of aircraft not suitable to co-operate with an Army in the Field.

Now, 'L'Auto" is a singularly well-informed paper. Also there has been a rumour to very similar effect floating about in other than R.A.F. circles for some time. Also, though one may not have a high regard for Sir Henry Wilson's political associates, one believes him to be a soldier of great ability and of a very enlightened outlook. And so the statement of "L'Auto" and the military rumour would seem to have a reasonable foundation of probability.

Furthermore, Sir Henry Wilson being in high favour among politicians in power at the moment—as one judges from the fact that Sir William Robertson, a very great soldier indeed, was displaced to make room for him, and that Sir Henry Wilson was made a Field-Marshal when Sir William Robertson, despite all his great services, was not—is very likely to have his way, despite all opposition from the Treasury, the Bolshevists, and the Pacifists. Therefore it seems worth while to discuss the hundred squadrons mentioned in the statement as being within the bounds of possibility.

THE THREE SERVICES AGAIN.

The mere idea of having a hundred squadrons for the Army alone naturally obliges one to consider the position of the Air Ministry in the case of such an eventuality. If the Army is to have those squadrons, are they to be part and parcel of the Army, or are they to be supplied to the Army by the Royal Air Force? The answer to the conundrum seems to depend largely on the solution of the problem propounded last week—namely, whether the Navy is to take over all the sea-going personnel and matériel of the R.A.F. and revive the Royal Naval Air Service, or whether the R.A.F. is to take over the Navy?

One has never been a believer in the ability of a single Air Force to do all the air work of the Navy and the Army, let alone the work proper to an Independent Air Force in addition. When a crowd of misguided politicians started the agitation for this single Air Force in 1916 one was strongly opposed to it, and one has never found any reason to alter one's opinion. The lamentable deterioration in quality of aviators and aircraft alike since the R.A.F. came into being in 1918 has confirmed one's first impressions of the evils of the single Air Force idea.

When this idea was first propounded in 1916, one stated definitely that a naval aviator ought to be a naval officer or rating, and that an aviator working with the Army ought to be a soldier, first, foremost, and all the time. A seaplane or an aeroplane is merely a vehicle conveying a sailor or a soldier on his lawful occasions. At the same time one expressed the opinion that there might be room for a Third Service, consisting of an Air Fleet for use on occasions when neither the Army nor the Navy was necessary, or to co-operate with the two senior Services in the general strategy of a war, but employing its own minor strategy and tactics.

THE THREE SERVICES IN BEING.

Something approaching this state of affairs actually occurred in the last stages of the recent war. The Navy was co-operating, after a fashion, with the Army in a mild offensive against the enemy's coasts in Belgium, Bulgaria, and Palestine. The R.A.F. in France, under General J. M. Salmond, was to all intents and purposes part and parcel of the Army—even to the extent of local Army Commanders having power to suspend or supersede R.A.F. officers. The R.A.F. in the East, under General W. G. H. Salmond, was equally part and parcel of the Army in the East, though its sea-going units were a badly mishandled part of the Navy.

At the same time General Sir Hugh Trenchard's Independent Force, R.A.F., was an absolutely distinct Service, conducting its own campaign against the interior of Germany in accordance with the general strategy of the war, but entirely independent of the Army's strategy. On occasion the Independent Force took part in Army operations, as in preparing the ground for offensives by the French and American Armies in Alsace-Lorraine, but this was a precise parallel to the work of the Navy in bombarding the enemy's coastal positions, albeit the R.A.F.'s work was considerably more effective.

THE JUSTIFICATION OF THE INDEPENDENT FORCE.

The operations of the Independent Force were excellently planned and very well executed. That they were not superlatively well executed was no fault of the G.O.C., nor of his Staff, nor of the personnel of the I.F. Where they failed to do all that might have been done in the way of smashing the Rhine cities and bombing Berlin, the failure was due entirely to defective material. And that defective material was due altogether to the crazy idea of a single Air Force, which forced the Navy, the Army, and the Independent Force to depend for their aircraft matériel on a single line of supply, which line was blocked at intervals by little groups of the most amazing fools or the most virulent knaves in the history of war.

In spite of this hindrance the Independent Force more than justified its existence. And there is no doubt that if hostilities had not come to a premature end the Independent Force would have acquired better matériel and would in the next six months have induced in the German people a very much more humble frame of mind than that in which they were when fighting ceased, and than that in which they are to-day.

Independent Command.

It must be evident, even to the comprehension of a politician, that the Command of the Air over an enemy country will produce a much more demoralising effect on the inhabitants of that country than can be produced by an Army hammering vainly on its frontiers, or by a Fleet innocuously blockading its ports, or by a perfectly peaceful Army of Occupation inhabiting an inconsiderable fringe of its territory.

Also, it would seem that this Command of the Air over an enemy country can only be won and held by an Air Force which is under a commander who is absolutely free from interference by any commander of a Fleet or an Army. If the Air Force to whom such a task is committed should be under the Admiral of a Fleet, it would inevitably be diverted to the uses of the Fleet, even under more favourable circumstances than those enshrouding the much-advertised British Navy. Similarly, if it were under the C.-in-C. the Army in the Field, the Air Force, or at any rate a serious part of it, would be diverted by the Army to uses within the theatre of war and the field of battle—that is to say, to the uses of Army strategy and tactics—for it became an axiom in the recent war that the Army could never have enough aircraft.

Thus one is convinced that for offensive operations a separate Air Force is essential to the Armed Forces of any nation.

Air Defence Forces.

When one comes to consider defensive operations one is met with stronger arguments against a Third Service for the Air. The brilliant success of the London Air Defence Area under General Ashmore has proved beyond argument that anti-aircraft defence is a distinct branch of the science of war, and that anti-aircraft defences must be a permanent institution in any country, just as coast defences are to-day.

Coast defences may now be abolished, seeing that half a dozen torpedo-planes can do more against a bombarding fleet than can a dozen coastal batteries of heavy guns. But batteries of anti-aircraft guns, with their accompanying search-lights and balloon aprons, and their co-operating squadrons of aeroplanes, and their specially trained personnel—each man being a specialist in his own line—under a unified and centralised command, are essential to the safety of every country.

The debatable point is whether these anti-aircraft defences should be part and parcel of the Army, or whether they should come under the commander of the Air Force of each country.

It is evident that whatever means are devised for the protection of cities at home against aerial attack will be equally valuable for the protection of ammunition dumps, hospitals, headquarters and other agglomerated institutions with the Army in the Field, and for the protection of the Fleet at sea, whether that Fleet shall consist in the future of obsolete battleships—as does the British Fleet to-day—or of high-speed aircraft-carriers as it will do in the future, if the Lord endows the Admiralty with intelligence. On the face of it, therefore, it would seem that, if only for efficiency in the working of the Adjutant-General's and Quartermaster-General's departments, the anti-aircraft defences should come under the Commander-in-Chief Home Forces. (*Note.*—One is aware that in this country there is a C.-in-C. the Forces in Great Britain and a G.O.C.-in-C. the Forces in Ireland, but one is discussing countries in general.)

But, as in fact neither the Navy nor the Army as such will have anything to do with defending a country against attacks from the air, it would seem permissible to argue that anti-aircraft defences should come under the C.-in-C. Air Forces at Home for operations, administration, and supply. If and when the defending Air Force is defeated in the air and an invading air fleet succeeds in landing considerable forces in a given country, then the Army of that country will come into action against the invaders, but that seems to be another question.

The Invasion of Great Britain.

As regards this country in particular, there are those who ask why we need trouble to prepare defences of any kind, seeing that our only enemies, the Germans, are adequately defeated and disarmed. Even that exceptionally able writer, Mr. Gerard Fiennes, the Navy's strongest defender, seems unable to believe that any other country can invade us by air.

All these writers seem to ignore the obvious war of the future, the great race-war against the Slavs.

We have seen in the recent fracas how the British Navy let us down and allowed the numerically inferior German Navy to acquire a complete command of the Baltic, thus cutting our communications with Russia and preventing us from nipping Bolshevism in the bud. Is it not evident that in the Slav War we shall again lose command of the Baltic?

For our own momentary peace of mind we have destroyed the German Navy, or at any rate we placed the German Fleet in such a position that it was destroyed by its own officers as the only way in which they as loyal servants of their Emperor could retain their honour. Likewise we have destroyed Germany's Air Fleet, the best in the world except our own. And for the pacification of the proletariat, who object to paying for health insurance and war insurance alike, we are rapidly destroying our own Air Fleet.

When the Slav Race combines against us, and brings into operation the Air Fleet which it can build without hindrance from the futile League of Nations in the inner immensities of Russia, there will be nothing, least of all our future friends and allies, the Germans, to prevent the Slavs from taking complete control of the Baltic. The Scandinavian nations are brave, but small. They may defend their fastnesses in the mountains, but they cannot hold their coastal plains. And the South-West corner of Norway is a pre-ordained jumping-off place for the aerial invasion of Great Britain.

Proofs from the Past.

Many months before this war a certain very amiable desperado, one Tryggve Gran, Norwegian sailor, Antarctic explorer, and later Major R.A.F., flew a Blériot with an 80 h.p. Gnôme from Aberdeenshire to Norway. His journey is to the Slav Air Fleet of the future what Louis Blériot's cross-Channel trip of 1909 was to the German aviators of 1915-1918. It is a very simple sum in proportion.

What kind of anti-aircraft defence would be necessary to prevent the landing of an air fleet in the vast open expanses of Aberdeenshire and Fifeshire? Mr. Fiennes remarks sarcastically that aerial invaders will need to carry "inconceivable cargoes of guns, munitions, and supplies." One may remind him that the German Riesenflugzeugen of 1918, which did so much damage to certain Naval barracks and to certain eminently respectable houses in Maida Vale, carried cargoes of bombs which were "inconceivable" in 1914—except by those few of us who knew how aeroplanes would develop.

And, be it remembered, though Russia has been fairly futile in mechanical matters in this war, Russia none the less produced the first giant aeroplane. And Russia is the one country in the world which is entirely self-supporting in the matter of all the raw material necessary to build and operate an Air Fleet.

The lesson is fairly clear for all who have eyes to see. One has no hopes that these prophecies will have any effect on a blind and foolish people. Nor can one in this case very well hope to live to have the grim satisfaction of saying "I told you so," as one has had in the matter of one's prophecies made before the recent tribe-fight began. But perhaps some of one's very young readers of to-day will pay one the posthumous compliment of digging up these and other various remarks on the Slav War and saying, at any rate, "We were told so."

OUR FIRST LINE SERVICE.

All of which being so, and things being as they are, it seems very well indeed that the Army should want a hundred squadrons of aeroplanes of its very own, and that the Navy should be agitating internally to take over the sea-going side of the R.A.F. If these desires be gratified, one can see the possibilities of a real Third Service arising, free to concentrate its efforts on becoming the First Line of offence and defence of the British Empire.

With chiefs who are loved and trusted as are the chiefs of the R.A.F. to-day the Royal Air Force may well become worthy of its parent, the British Army. With Sir Hugh Trenchard as Chief of the Staff, with Sir John Salmond as commander of the active service branch, with General (or Commodore, if it be preferred) Longcroft training the rising generation in the tradition of the King's Service, with General (or Commodore) Webb-Bowen setting the Far Eastern units in the right path, with Sir William Salmond organising the forces for over-seas stations, and with other officers tried and trusted as the result of war experience, an Air Force free from the control of or responsibility to the Navy or Army may be built up to do its duty by King and Country.—C. G. G.

THE DEPARTURE OF GENERAL SEELY.

POST SCRIPTUM.—As this paper goes to press it is announced that General Seely has left the Air Ministry, to go none knows whither. General Seely is an honest man and a fervent of aviation, but he lacks practical common sense. Therefore one feels that his departure brings a step nearer the setting of the King's Flying Services on a proper footing.—C. G. G.

CONCERNING SCANDALS.

Even before the outbreak of the late war the armed Forces of the Crown provided the basis of large argument, and between those who extolled their virtues and those who belaboured their futilities there passed much inconclusive verbiage. Each side separately could produce on paper or in the spoken word apparently conclusive evidence in support of their attitude, and in the absence of a general public knowledge of the actual working conditions of the Army and Navy the side which could appeal most strongly to the prejudices of the British public obtained the larger hearing.

One point was noticeable, and that was the very small proportion amongst the disputants of those who held, or had held, any position of responsibility within the Forces in question.

Since August, 1914, this condition has been modified greatly, and, from Admirals of the Fleet to second lieutenants, persons who have been honoured by the grant of His Majesty's commission have publicly expressed the opinions which their experience within H.M. Services have engendered in their minds.

Within certain limits this is probably all to the good. It tends to remove the discussion of the merits or demerits of the Navy, the Army, and the Air Force, the efficiency of their organisation, the morality of their existence, and such like topics, from that academic sphere which is inhabited almost entirely by impracticable theorists, to a more mundane and useful level.

Unfortunately the desirable limits have been widely exceeded.

SALTEENAS IN THE SERVICES.

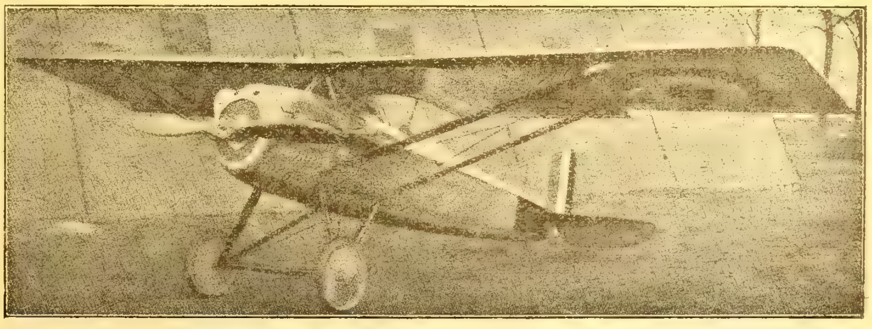
Before the outbreak of war His Majesty's Services were in the main officered by gentlemen, together with a small sprinkling of those who, like Mr. Salteena of "The Young Visiters," were "not quite gentlemen, but you would hardly notice it."

The doctrine was generally firmly held by the former class that, as they were part of the whole, defects and deficiencies within that whole were matters which it was their business to rectify, to the best of their ability, from within, with the least possible publicity.

They were part of the Service; its defects were their defects, its improvement their duty, and its growing efficiency their reward.

Since the war this state of affairs has altered very completely. The number of gentlemen holding His Majesty's commission increased; the number of "Salteenas" similarly honoured increased to an even larger extent; and a very large number of those of whom it could by no manner of means be truly said that "you would hardly notice it" were clothed in a little brief authority and the uniform of an officer.

The leaven of gentlemen no longer sufficed to preserve the accustomed decencies of the Services. Those of the last-named class who found that the habits of the particular arm to which they were appended involved them in inconvenience, loss, or a position of less dignity than that which they felt to be their due showed few hesitancies in exposing their personal grievances to the world at large.



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It has done well in the Deutsch Cup Competition.

Their example has proved too much for the "Salteenas," and even some few amongst these who had escaped detection for years before the war have revealed themselves in their true aspect.

THE ATTRACTION OF SCANDALS.

Thus the Press is daily replete with Navy, Army, and Air Force—particularly Air Force—scandals, which very generally appear to have their origin in the disappointed ambitions of the disgruntled.

Sometimes these are frankly an effort to secure recompense for an alleged wrong done to an individual. This type is sufficiently to be deprecated, but it is preferable to the more common type, which bears all the signs of being engineered with the general object of discrediting the Service involved as a means of obtaining satisfaction for its having assessed the authors of the agitation at their true worth.

The efficiency of the Navy, the Army, and the Air Force is a matter of public concern, and the pre-war absence of authentic information as to their condition had many drawbacks.

Had the present state of affairs no other result than to reveal how large a number of the adult male population of these islands are devoid of the instincts of decency, it were sufficiently regrettable, but unfortunately its effects are far wider.

It tends to discredit among the decently minded any honest effort to improve the efficiency of these Forces, and at the same time makes it impossible to appeal to the masses through the daily news-sheets.

A daily column entitled "More W.R.A.F. Scandals" will always draw more readers and influence more votes than will any considered and informed criticism of Air Ministry policy in regard to the organisation and equipment of the R.A.F., and personalities thus become of more practical importance than the efficiency of the Empire's defences.

THE RETURN OF RETICENCE.

A return to the pre-war standard of reticence upon the internal economy of His Majesty's Forces is now impossible, even were it desirable.

A very large proportion, and that generally the more intelligent and decent-minded, of the population of this country has served with those Forces during the war, and will have to so serve again if the next great war arrives as soon as it may.

Most of these people are no longer within the Services, and they are therefore debarred from lending internal silent support to their organisation and efficiency. At the same time it is manifestly to their interest and distinctly their business to secure, by any means in their power, that, if and when the next war does break out, the Forces of this Empire shall be properly organised and equipped, and that the many defects which marked our extemporised fleets and armies shall be remedied ere it is to late.

There is thus all the difference in the world between the making of scandals out of personal grievances and agitations in favour of reforms designed to promote the efficiency of the Royal Air Force, such as those which THE AEROPLANE is wont to father.

The drastic cutting down to which that body is now being subjected must inevitably lead to disappointment on the part of many of its members who find themselves left out of the list of permanent commissions.

It is also a matter for sincere regret on the part of all those who believe in the future of the Air Force and who wish to see it take its proper place amongst the Royal Services as the first line of Imperial Defence.

But it serves no good purpose to attempt to create a disturbance on the ground that A has been demobilised while B, of much inferior attainments, has been granted a permanent commission.

If B happens to have just one rare attainment necessary to the operation of the Force, whereas A does uncommonly well a number of things each one of which can, however, be better done by one other man, A can safely be dispensed with, whereas B cannot. This is unfortunate as far as A is concerned, but the interest of the Force comes first.

RESEARCH OR SUICIDE?

It is from this point of view that attention is again drawn to the suicidal action of the Air Ministry towards the research sections of the Technical Department.

The impending doom of Martlesham Heath Testing Station, and the probability of Grain following it, have been noted and protested against already. It appears that the Navigational Experimental Establishment and the Wireless Research Station are to follow—if they have not in fact already been disbanded.

There is no doubt that a very large number of R.A.F. officers will hear of these facts with complete equanimity.

The average pilot will feel that it is but just that technical officers who won the war in their offices be asked to make room for those who risked their necks over the lines.

But the average pilot should take thought to himself and consider just how much he and the others of his kind, without the aid of the despised technical men, could do towards developing serviceable military or naval aircraft and their necessary equipment. Let him consider his own feelings if, at the end of ten years, he were asked to take the air against an up-to-date enemy air fleet, himself mounted on a machine the product of ten years' amateurism.

MILITARISM VERSUS COMMERCIALISM.

Were this country possessed even of a healthy and flourishing Aircraft Industry sufficiently wealthy and enterprising to carry out the experimental work necessary to keep British aircraft design in advance of that of the rest of the world, a strong Technical Research Department attached to the Air Force would still be needed to attend to the purely military side of design and to the armament and equipment of aircraft for military purposes.

This feature of the R.A.F. organisation will become more and more necessary as the peace goes on. During the war aeroplane designers had no aim beyond the production of machines destined for war purposes. With the advent of peace their thoughts have turned to the modification of their designs to adapt them to commercial purposes, and assuming that the peace continues for ten years or so the great majority of designers will by then have entirely forgotten the special needs of military aircraft

Just as to-day they are offering converted war machines for transport work, they will then offer converted cargo-carriers for military purposes, unless the Air Ministry maintains a strong Technical Research Department to attend to the development of military aircraft and its equipment.

At the moment the Air Ministry is doing nothing of the sort. A small nucleus of administrative officers with technical knowledge is apparently to be kept, and quite rightly—but the efforts of this nucleus of a Technical Department to keep in the Service the trained specialist staffs of the actual research establishments is being opposed tooth and nail by the Personnel Department.

THE ABANDONMENT OF PROGRESS.

Although it were better that the Technical Department remain as a nucleus of specialist administrators than that it should disappear entirely, the abandonment

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of actual research work will very seriously reduce its value.

The experience of the past five years shows conclusively that it is a relatively simple matter to pick men physically and mentally capable of becoming decent pilots, and that converting the raw material into the trained pilot is a fairly quick process.

The experience of the same period indicates that it is very difficult indeed to pick the right class of man to make a really good research officer, and that the organisation of a Government Department is entirely incapable of training men having those qualities with any certainty of success. It is just as essential that a technical officer should consider his Service before his own interests as it is with any other type of officer, but, particularly in the case of officers engaged on test or research work, it is extremely essential that they be men of knowledge, imagination, and of initiative.

Men possessing these latter characteristics are not amenable to discipline in the sense in which it is still understood in H.M. Services. They are not usually prone to refrain from doing that which they think ought to be done merely because in the opinion of their fellows that thing is amongst those "not done."

THE LESSONS OF DISCIPLINE.

But one who possesses sufficient knowledge, imagination, and initiative to realise that a breach of discipline almost invariably does much more harm to the Service than any abuse which may be the motive of that breach, and that for the good of the Service he must content himself with such methods of fighting abuses as the customs of the Service provide, is a much more usefully disciplined officer than he who is merely controlled by the prevailing fashions. Good technical officers—in this sense—are rare, and if, as seems probable, the Air Ministry succeed in freezing out most of those who do exist, they will find it by no means easy to replace them.

This type of man does not flourish under official tutelage, and only suffers fools—then not gladly—when he is old enough to realise that they are necessary ingredients of a very mixed world, so that in his earlier years he is not particularly amenable to the kind of training served out at Cadet Schools. Therefore the R.A.F. need not imagine that it can produce the type as needed.

In all probability, when it has successfully demobilised all its capable technical officers, it will find it impossible to replace them at all.

Therefore in the interests of the Service it would be wiser to sacrifice pilots—even the best of pilots—since they are relatively easily manufactured, and to stick to the small number of really capable research officers who do exist—since these are rare and cannot be made to order.—W. H. S.

THE BRITISH AIRCRAFT COMPETITIONS OF 1920.

In connection with the British Aircraft Competitions for prizes amounting to £64,000, the Air Ministry announced on Nov. 10th the following list of engines for use by competitors have been approved by the Air Council. It will be left to the discretion of the judges to decide whether any new engine not included in this list fulfils the conditions of the competition.

A.B.C. (all types), Beardmore (100 h.p.), B.H.P., B.R.1, B.R.2, Cosmos (all types), Galloway Adriatic, Galloway Atlantic, Galloway Pacific, Green (all types), Napier Lion, R.A.F. (all types), Rolls-Royce (all types), Siddeley Puma, Sunbeam (all types), Wolseley Viper.

The competition will be held commencing on the following dates:—

Aeroplanes (small type), March 1st, 1920.
Aeroplanes (large type), May 1st, 1920.
Seaplanes (amphibians), Aug. 1st, 1920

The places at which the competitions will be held will be announced later.

Competitors must enter machines on or before the following dates:—

Aeroplanes (small type), Dec. 31st, 1919.
Aeroplanes (large type), May 1st, 1920.
Seaplanes (amphibians), April 1st, 1920.

The following publications in connection with these competitions will be available for issue towards the end of the month:—

British Aircraft Competitions 1920, Aeroplanes, Conditions and Tests (B.A.C. Form A).

British Aircraft Competitions 1920, Seaplanes (Amphibians), Conditions and Tests (B.A.C. Form B)

British Aircraft Competitions 1920, Notice to Competitors (B.A.C. Form C).

British Aircraft Competitions 1920, Rules and Regulations (B.A.C. Form D).

British Aircraft Competitions 1920, Entry Forms (B.A.C. Form E).

These papers will be obtainable from H.M. Stationery Office or from the Secretary (C.A.L.) Air Ministry.

THE FLIGHT TO AUSTRALIA COMPETITION

A Reuter telegram from Cologne, dated Nov. 3rd, stated:—

Capt. Matthews left the aerodrome at Cologne on Nov. 2nd and came down at Mayence, in the French occupied region. Capt. Matthews refuses to divulge his plans to anyone. He came to Cologne because he could get meteorological reports and information which he could not get in England.

THE BLACKBURN ENTRY.

Capt. G. H. Wilkins, M.C., is the commanding officer and navigator of the Blackburn "Kangaroo" entered for the flight to Australia competition. He was second in command of the Stefanson Arctic Expedition in 1913-17. After the return of the expedition he was engaged as an Australian Army official photographer in France, Gallipoli, and Palestine. He is now under agreement as Chief of the Scientific Staff of the Cope British Imperial Antarctic Expedition which will leave England in about the middle of 1920.

The first pilot is Lieut. Val. Rendle, who was born in Brisbane. He joined the Queensland Volunteer Flying Corps in 1915 and was commissioned in the R.F.C. in March, 1917.

The second pilot is Lieut. D. R. Williams, who was a ferry pilot and instructor in the Aus.F.C.

Lieut. G. H. Potts is the engineer officer. He was with the Australian G.E.C. of Sydney and served as a gunner officer in the Aus.F.C.

The Australian Blackburn "Kangaroo" has been fitted up to take a crew of four with dual control. The tankage has been increased and the petrol system converted to gravity feed. Rolls-Royce, Ltd., have supplied two specially tuned 275-h.p. Falcon engines fitted with 12-point magnetos and special carburetters

THE GRAIN DINNER.

The dinner of officers and ex-officers of the Marine Aircraft Experimental Depot, Isle of Grain, which was held at the Café Royal Restaurant on Saturday, Nov. 8th last, was an extremely successful affair.

Something over eighty officers and ex-officers of the station were present, and the dinner was presided over by Wing Commander E. Featherstone Briggs, D.S.O., O.B.E. (Commanding Officer, 1917), supported by Wing Commander C. E. Risk, D.S.O., and Wing Commander H. R. Busteed, O.B.E., A.F.C., his predecessor and successor in the command.

Owing perhaps to a breakdown in a Pelmanised memory, the remaining O.C. Grain did not attend

At the conclusion of dinner, the King having been duly honoured, the past, the present and the future of Grain were eloquently discussed, described, and forecasted by sundry competent authorities to the entire satisfaction of all present, and it was unanimously decided that the Grain dinner be a recurring annual event.

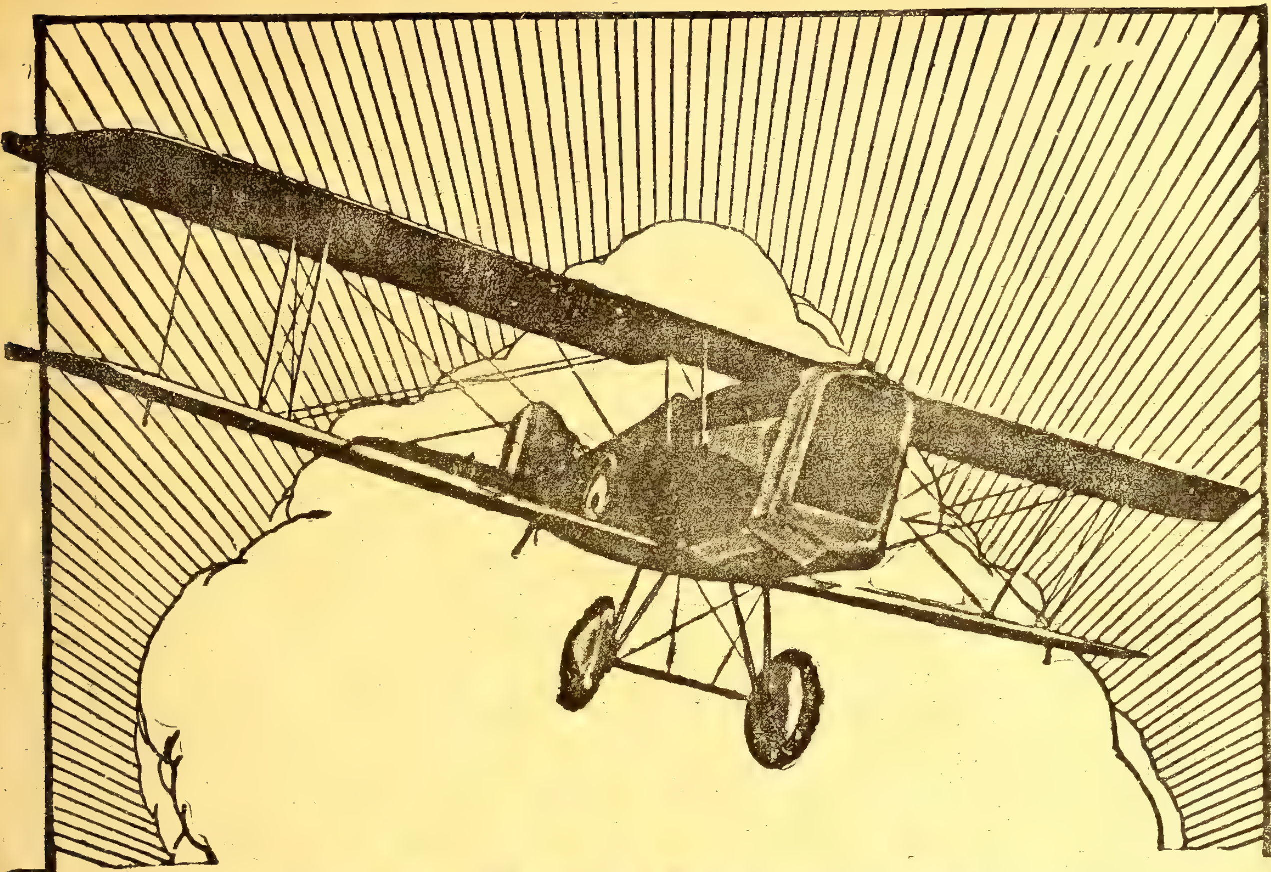
It appeared to be the general opinion of those competent to judge that the continued existence of the Experimental Depot at Grain was now reasonably assured, but it was felt that, whatever fate befell the establishment, Grain both as a war station and as an experimental depot had made a permanent mark in the history of the naval use of aircraft, and that those who had been associated with its work would never forget it.

In connection with the continuance of this festivity, the secretary of the organising committee, Capt. L. A. T. Pritchard, mentioned that the collection of addresses from ex-members of the Grain staff had in the past presented great difficulties, and asked all present to leave their permanent addresses on their name cards.

If any of those present omitted to fulfil this request, or are in any doubt as to the legibility of the address so left, will they kindly send the information to Captain Pritchard at Wadham College, Oxford, before they have entirely forgotten the matter?

CONGRATULATIONS.

HANDLEY PAGE.—On Nov. 5th, at Lymes Holme, Stanmore, Middlesex, the wife of F. Handley Page, of a daughter.



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THE FUTURE OF FLYING DEPENDS ON RELIABILITY

The following is an extract from a leading Article in the DAILY MAIL, *October 9, 1919:—*

"A LANDMARK IN FLIGHT."

Flights scheduled ...	86	Interrupted by weather	1
Flights accomplished...	83	Interrupted by mechanical defect	1
Prevented by weather	1	Number of miles flown ...	20,750

"The above figures, reflecting the opening six weeks' activity of the London-Paris Air Express Service, need little elaboration. Reliability in the air has been achieved.

"At 12.30 p.m. each day from Paris and from London, the London-Paris Air pilots have started off more punctually than many a train. They have averaged 106 miles an hour and covered the 250 miles systematically in 2¼ hours. The machines are a peace offshoot of the famous de Havilland bombers, and the pilots—an all-important factor—are the cream of the R.A.F. Business men have booked up the service for a month ahead. The Company is aiming at an hourly schedule, but we believe its main immediate success will be in carrying mails at a speed by which it will be possible to get a reply, by tea-time, to a letter airmailed to Paris after breakfast.

"Reliability must be guaranteed the public. That it is so guaranteed emerges forcibly if we consider that the London-Paris stretch is the worst in the whole world for rapid weather changes, and that in the six weeks above tabulated only eight days were officially reported as 'favourable for flying.'"

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NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, Nov. 10th.

The President of the French Republic, accompanied by Madame Poincaré, arrived in London this afternoon on a visit to the King and Queen at Buckingham Palace.

The Prince Albert, attended by Major Louis Greig, received the President on his arrival at Dover, on behalf of the King.

The President and Madame Poincaré, accompanied by the Prince Albert, travelled by special train on the South Eastern and Chatham Railway to Victoria Station.

The King and Queen met the President and Madame Poincaré on arrival.

There were also present at the station: Representatives of the Royal Navy, the Army, and the Royal Air Force.

In the evening the King and Queen gave a banquet in honour of the President, who was accompanied by Madame Poincaré, at which the Prince Albert was present, and the following had the honour of being invited: The Right Hon. Winston Spencer Churchill, M.P (Secretary of State for War and Air), and Mrs. Churchill, Air-Marshal Sir Hugh Trenchard, Bt. (Chief of the Air Staff).

NAVAL.

LIGHTER-THAN-AIR CRAFT.

As from Wednesday, Oct. 22nd, the airship service, with its stations, machinery, plant, and stores, was transferred from the Admiralty to the Air Ministry. This state of affairs has been threatened for some time past, the Government having decided during the summer to make the transfer. As airships are essential to a fleet at war, it was a foregone conclusion that such a purely naval affair as the airship service should be transferred to the R.A.F.

H.M.S. "ENGADINE."

His Majesty's Seaplane-carrier "Engadine" has arrived at Sheerness from the Mediterranean. She will be paid off at Chatham and refitted for commercial use.

H.M.S. "Engadine" is the most famous of the three cross-Channel steamers requisitioned by the Admiralty as seaplane-carriers at the beginning of the war. She took part in the air raid on Cuxhavn and Wilhelmshavn on Christmas Day, 1914, and was, one believes, the flagship of the three seaplane-carriers. In the much-disputed Jutland battle "Engadine" took part and gained a mention in dispatches therefor. She it was who sent up the only seaplane that took part in the battle, and to "Engadine" fell the honour of towing the disabled "Warrior" out of danger. Since that time she has been on active service in the Mediterranean, including, during the last few months, service against the Russian Bolshevists in the Crimea.

THE NAVAL WARRANT OFFICER AND THE R.A.F.

The formation of a new Service from sections of the two original Services in His Majesty's Armed Forces necessarily causes hardship to some of the personnel whose transfer is necessary if success is desired. But it is possible in most cases to remedy the genuine grievances by the drafting of special regulations to remove the anomalies which must arise from the sudden mixing of naval and military personnel.

The Naval Warrant Officers who have transferred from the Royal Navy to the Royal Air Force have in many cases suffered disabilities which could be removed by a small readjustment in the regulations governing these matters. There can be no recurrence of these cases as they all arise from the formation of the new Force. Future transfers will follow normal lines, and those who desire to be transferred must naturally abide by the consequences. Regulations will be in existence and will have stood the test of time. At present they are drafted as the occasion arises and there consequently is a high degree of incoherence.

To quote one case, there is an R.A.F. officer who in 1910 joined the Navy on a twelve years' agreement. Two years later he volunteered for service in the R.N.A.S. and became a Rigger, which he continued to be until the end of 1914. Early in 1915 he went to France, where he remained throughout the war. In 1917 he was promoted Warrant Officer 2nd Class. On the famous April 1st, 1918, he was transferred, in common with others, to the R.A.F. as a 2nd Lieut. (Technical) and became at a later date Lieut. (Acting). He applied for a regular commission but so far has not received one.

He has left the Navy and has thereby forfeited his chances of a pension. Unless he receives a permanent commission his Service life (in common with that of several dozen officers serving under exactly similar conditions) is over. His conduct has been excellent and his efficiency is unquestioned. Should not something be done to give this officer an opportunity of continuing in the Service for which he has so sincere a regard? If he is to return to the Navy—supposing that the Navy would agree to his return—his reversion from commissioned to warrant rank would be a quite unsuitable punishment for a constant adherence to the highest ideal of duty.

Would it not be well to stretch the rules and ordinances of the Personnel Department to the uttermost limit and so admit all the efficient promoted Warrant Officers to the permanent establishment of the Royal Air Force?

MILITARY.

ANOTHER WAR?

Owing to continued hostility on the part of the Waziris and Mahsuds in Afghanistan the Government of India has been forced to consider the adoption of punitive measures. The representatives of the tribes have been summoned to meet the Government to discuss the matter. As they refuse to appear and the Government's terms were refused, the tribes were given time to remove their women and children to a place of safety, when the country was subjected to an intense bombardment from the air. One questions the advisability of removing the women and children. According to certain frontier stories, the Afghan women can hold their own when it comes to atrocities.

Major-Gen. Climo, who took part in the recent Afghan campaign, will command the British forces, and many aeroplanes will be placed at his disposal besides the usual force of artillery, cavalry and infantry.

The aerial operations against the above-mentioned tribes began on Oct. 28th, when Wana was attacked by three De Havilland machines from Mainwali, and some 2,000 lb. of bombs was dropped. A number of incendiary bombs was included in the equipment of the machines, and hits were observed. All the machines returned. A reconnaissance raid had been previously made on Oct. 25th, and according to one account nine bombs were dropped upon that occasion.

The tribesmen appear to have been duly impressed by the bombing of Wana, and quite a good deal of damage has been done.

A WHITE PAPER.

The following accusation is contained in the White Paper issued by the India Office on Nov. 5th. The White Paper deals principally with the supply of medical stores, etc., to the British force during the last Afghan war:—

"The arrival of squadrons of the R.A F. without machines (there were no ships to carry the machines) had nothing to do with Indian arrangements nor the Secretary of State. It is for Air Ministry to fix the responsibility.

"As regards the obsolete machines of the squadrons in India on the outbreak of war, the General Officer Commanding, Royal Air Force, cabled to the Air Ministry on Jan. 23rd, 1919, and Feb. 25th, 1919, for their replacement by 'Bristol' fighters."

AIR FORCE.

DECORATIONS AND MORNING DRESS.

The following notice appears in the "London Gazette" of Oct. 31st:—

All members of the various Orders of Knighthood, etc., and all persons who have been awarded decorations and medals may, should they wish to do so, wear their Insignia, decorations, and medals with morning dress on official occasions and at public functions.

The ribbons of the Orders, decorations, and medals may be worn on all occasions at the discretion of the holder.

The method of wearing the Insignia of Orders, also decorations and medals, on official occasions and at public functions with morning dress is as follows:—

Knights Grand Cross, Knights Grand Commanders, Dames Grand Cross, Knights Commanders, and Dames Commanders

Should wear the Star only on the left breast of the coat or in a corresponding place on the dress, as the case may be.

Members of the Order of Merit, men who are Members of the Order of the Companions of Honour, Companions of the several Orders of Knighthood, Commanders of the Royal Victorian Order, and men who are Commanders of the Order of the British Empire

Should wear the ribbon to which the badge is suspended under the tie, which should be a bow, the badge hanging about three-quarters of an inch below the bow.

Women who are Members of the Order of the Companions of Honour, Companions of the Distinguished Service Order, Officers of the Order of the British Empire, Members of the 4th and 5th Classes of the Royal Victorian Order, Members of the Order of the British Empire, persons who have been decorated with the Victoria Cross, the Royal Red Cross, the Distinguished Service Cross, the Military Cross, the Distinguished Flying Cross, the Air Force Cross, and persons who have been awarded medals

Should wear the badges, decorations, and medals on the left breast of the coat, or in a corresponding place on the dress as the case may be.

The method of wearing the ribbons of Orders, decorations, and medals, which will be the same in all cases, both for men and women, is as follows :—

A piece of the ribbon one and a half inches wide, or the width of the medal ribbon and half an inch in depth, mounted on a bar of metal in the form of a brooch, to be worn on the left breast of the coat, or in a corresponding place on the dress, as the case may be.

NOTE.—The above intimation only refers to morning dress.

PRESENTATION AEROPLANES.

On Saturday, Nov. 8th, the city of Birmingham presented an aeroplane to the Dominion of South Africa. This was Birmingham's contribution to the Imperial Air Fleet. The presentation took place at the Castle Bromwich Aerodrome, and among those present were Lord Desborough, the president of the Imperial Air Fleet Committee; Major-Gen. Sir F. H. Sykes, G.B.E., K.C.B., C.M.G.; and Air Commodore E. M. Maitland, C.M G., D.S.O., A.F.C. During the ceremony a medallion was presented by the Hon. R. A. Blankenburg to Capt. Pott, D.S.O., a South African, for services rendered in the destruction of a Zeppelin off Hartlepool in 1916.

BOY RECRUITS FOR THE R.A.F.

The Air Council has asked the various education authorities to assist in recruiting boy learners for the R.A.F. The local education authorities nominate candidates on the grounds of educational attainments and general suitability, the idea being that boys of good education will thus be taught a trade and in time become skilled craftsmen.

Boys between the ages of fifteen and sixteen undergo three years' training in one or other of the skilled trades required in the R.A.F. and also receive a good general education, and at eighteen enter the R.A.F. for a further period of eight years. The syllabus for examination will be mathematics, English, history and geography, science, drawing. The first examinations are to be held in December with a view to the selection of seven hundred and fifty boys.

The scheme provides good prospects, for boys of character and ability, of early advancement to commissioned rank. And those who are not so fortunate will at least have the satisfaction of knowing that when their period of service is over they are skilled workers and able to earn their living in civil life.

RUGBY FOOTBALL.

On Saturday, Nov. 8th, the R.A.F. played Northampton with the following result :—R.A.F., 1 penalty goal—3 points; Northampton, 3 goals 2 tries—21 points.

This game opened at an exceedingly fast pace, and for the first twenty minutes very interesting play took place, the ball being at one end one moment and the other end the next, neither side gaining an advantage. The R.A.F. scored first, but Northampton immediately afterwards obtained a try, which was converted. The half-time score was 10—3.

In the second half Northampton crossed the R.A.F. line three times, while the R.A F. did not score at all, although some excellent openings were made, and if the team had been together and in practice a score could hardly have failed to have been made more than once.

The R.A.F. forwards were excellent, especially in the loose, and for the three-quarters Flt. Lt. Thomas did some very fine saving and defence kicking. The R.A.F. especially want one or two fast and speedy wings. Northampton were unlucky in having three of their team crocked in the latter part of the game.

R.A.F. team :—Full-back, Flying Officer Damant; three-quarters, Wing Comdr. Playfair (left wing), Sqdn. Leader Neale, Flt. Lt. Thomas, and Flying Officer Smith (right wing); half-backs, Sqdn. Leader Smart and Sqdn. Leader Pulford; forwards, Flt. Lt. Wakefield, Flt. Lt. Simpson, Flt. Lt. Munday, Flt. Lt. Scroggs, Flt. Lt. Drew, Flying Officer Rose, Flying Officer Abbot, and Serjt. Smith.—W. W. W.

At Weybridge, Nov. 8th : No. 2 New Zealand General Hospital, Walton-on-Thames, 22 points; R.A.F. (Uxbridge), 3 points.—J. F. S.

AN APPEAL AND THE NEXT MATCH.

Will players and people interested in R.A.F. Rugby football please inform W. W. Wakefield, R.A.F. Depot, Uxbridge, the hon. sec., of any useful players of whom they may know?

The next match is at the Athletic Ground, Richmond, on Wednesday, Nov. 26th, against the United Services. Kick-off 2.45 p.m.

THE R.A.F. ARMAMENT SCHOOL DINNER.

All officers of the old Staff are invited to a Re-union on Dec. 5th, at the Connaught Rooms, Great Queen Street, Kingsway. Assemble 19.00; Dinner 19.30. Tickets £2 each are obtainable up to Dec. 1st from Major G. E. Smith, 10, Chevening Road, Brondesbury, N.W.6.

WANTED : A HOME.

Now that the various squadrons of the R A.F. are settling down into something like permanent habitations, the squadron-mascot habit is likely to become a permanent institution.

If any squadron wants a squadron pet with a history one can recommend it to apply to Mr. W. H. McCudden for the bull-dog "Bruiser," which was the property of the late Major J. T. B. McCudden, V.C., D.S.O., M.C., M.M., Croix de Guerre. "Bruiser" is rather big for a household pet but would make an excellent member of a squadron mess, and Mr. McCudden would rather that he remained in the R A.F. than that he should become a mere civilian permanently.

Any squadron who would like to adopt "Bruiser" is invited to write to Mr. McCudden, c/o this office.

IRELAND.

It is understood from Irish sources that the Air Ministry has decided on establishing the headquarters of the Royal Air Force in the east of Ireland, at Gormanston, where an aerodrome was established during the war, and which still remains intact, with a number of very fine hangars and an abundance of workshops.

The Tallaght aerodrome is being closed down, sales of surplus stock are announced, and stores from that aerodrome and from Baldonnell will be removed to Gormanston, which is fifteen miles from Dublin.

The Gormanston aerodrome is free from surface water, as is a great deal of the neighbouring country, which is therefore very suitable for landing grounds. It is believed in the district that a passenger service will be started next year from England to Ireland, and that an aerodrome will be established in the vicinity of Gormanston.

FRANCE.

THE SAINT RAPHAEL-CASABLANCA FLIGHT.

The escadrille of flying-boats which has been waiting for some time to fly from Saint Raphael to Casablanca left the former place on Nov. 1st. Six started, but two returned later in the day owing to engine failure. Two of the remaining four reached Saint Sitges, 13 miles from Tarragona, and the last two Rosas on the same day.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

WAR PRODUCTION.

The following war figures are of interest. Italian works turned out 14,820 aero engines during the period 1915-18, half of these being Fiats, of which 4,000 were exchanged to the Allies for other useful wares. Some 500 or 600 were produced by several smaller firms—the Chiribiri, for instance, who just exceeded the latter figure, and the Ansaldo.

Towards the end of the war the price of 600 h.p. Capronis was advanced to 98,200 lire from about 75,000. The triplanes with bigger engines were, it has been stated, paid a rough 500,000 lire, not having reached the quantity production stage evidently at that period.

THE ROME-TOKIO FLIGHT.

Fiume reports that the wicked local Bora wind has destroyed a number of the aeroplanes pegged down there in want of sheds. Two of the Tokio flight machines are also *hors de combat* from the same cause. There still appears some likelihood of the Rome-Tokio coming on.

NEWS FROM ROME.

From Rome I learn that Col. La Polla, O.C. the Baracca aerodrome, was to stand for Parliament.

THE ENGINES OF T.34.

The six 500 h.p. San Giorgio motors of the new T.34 dirigible are of the Austro-Daimler type—as captured on a K. seaplane—built by Ansaldo.—T. S. H.

JAPAN.

THE AERIAL ARMS IN JAPAN.

The Army has in its possession several aeroplanes of European designs and construction. A Sopwith model and the

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Farman F.40 are allocated to bombing work. The Nieuport and the Sopwith "Camel" are classed as fighting machines. Other aeroplanes in the possession of the Japanese Government are the Salmson, Spad, and Standard—presumably the latter is American in origin.

The Navy has one base at Yokusuka for seaplanes and aeroplanes.

An airship station is in existence at Toksuka, where a hangar of 400 ft. in length is in course of construction. Two airships of 124,000 cub. ft. capacity are on order from Vickers, Ltd.

The French aviation mission has opened a flying school at Gifu and two depots for bomb-dropping and observation training at Nogoya.

SPAIN.

Mr. F. P. Raynham, who recently took an F.4 Martinsyde two-seater, 300 h.p. Hispano-Suiza, to Spain, has been doing some exceedingly demonstrative work there. He has taken up a number of officers of the Spanish Royal Flying Corps, and all have been greatly impressed by the speed and climbing quality of the machine.

Recently he has been demonstrating the F.4 as a bomber. With a 315 lb. bomb she climbed to 1,750 metres in 5½ min. The merit of this performance is enhanced by the fact that the aerodrome of Cuatro-Vientos is itself at an altitude of 750 metres above the sea, and the performance is equal to climbing from that height to 2,500 metres in 5½ min., which, of course, is considerably better than climbing from sea-level to 1,750 metres in the same time. Considering that the machine was originally designed as a single-seater fighter, its performance as a bomber is quite extraordinary.

A MADRID-TETUAN FLIGHT.

On Oct. 29th a cavalry lieutenant on a Breguet biplane flew from Madrid to Tetuan in 3 hours 30 min.

THREE BREGUET BIPLANES FOR THE SPANISH ARMY.

Three Breguet bombing biplanes were delivered at Madrid towards the end of October by MM. Massot, Walbaum, and de Romanet, who had flown them from Paris.

SWEDEN.

The Danish correspondent of THE AEROPLANE writes :—

The Italian Naval Attaché at Stockholm has on behalf of his Government presented Sweden with a 260 h.p. Savoia and an 80 h.p. Macchi flying-boats.

It will be remembered that the Italian Lieut. Count Robinet recently continued his transcontinental river flight from Italy to Holland on to Copenhagen and Stockholm, from where he returned to Holland to lead some more Italian Naval aircraft, staying there, on a Scandinavian circuit. So the presented specimens are likely out of a squadron of four, which reached the Swedish capital via Esbjerg and Gothenburg, where they were arrested for landing too near a fortress, Count Robinet having his flying-boat damaged at the Swedish capital from flying into some telegraph wires and losing speed, repairs yet being carried out at the Royal Dockyard there.

U.S.A.

An American aerial squadron is said to be going to visit Brazil at the beginning of next year.

THE LATE COL. T. F. DODD.

The death is announced from New York of Col. Townsend Dodd, U.S. Signal Service (Air Service), in an aeroplane accident at Bustleton, Pennsylvania, on Oct. 5th, 1919.

Born in 1886, he entered the Coast Artillery Corps as a lieutenant after two years as an engineer in the Civil Service in the Navy Department. He was already a B.Sc. of the University of Illinois.

On May 9th, 1913, he was posted to the First Aero Squadron, Signal Corps, at Texas City, and qualified as an aviator on Dec. 30th, 1913. Promoted captain on Sept. 8th, 1915, he took over command of a detachment, First Aero Squadron, at Brownsville, Texas. His intimate knowledge of engineering and his personal high ability made his opinion of considerable value to the Chief Signal Officer, who frequently consulted him. The University of Illinois having asked for his services as an instructor at an aviation school attached to that institution, the Chief Signal Officer replied that his services could not be spared, as he was then holding with credit the appointment of Department Aviation Officer, Southern Department, with the rank of major.

During the fracas with Mexico in 1916 he commanded the First Aero Squadron in the Punitive Expedition, and his experiences of aviation in that strange country with the strange machines then available make an instructive and amusing story.

In the summer of 1917 he went to France with the American Expeditionary Force, and was attached to General Pershing's staff as Air Service Officer. He did excellent work in the purchase of aircraft equipment and as a member of the Joint Army and Navy Aircraft Committee of the Aircraft Production Board.

While passing through England on his way to France, Major Dodd, as he then was, took the chair at that memorable Wilbur Wright Memorial Lecture delivered by Lieut.-Col. Mervyn O'Gorman. His speech on that occasion impressed everybody by its sound common-sense, and his charm of manner gave an excellent impression of the high quality of the aviation staff of the United States Army.

Promoted Lieut.-Col. on Aug. 5th, 1917, he became Colonel on Sept. 9th, 1918, and when Brig.-Gen. Mitchell became G.O.C. Air Service, Group of Armies, Col. Dodd was appointed to be his Chief of Staff.

In December, 1918, he was recommended for the award of the Distinguished Service Medal. Gen. Mitchell's minute in this matter concluded with the words : "Col. Dodd has been untiring in his devotion, and there is no officer with the A.S. who possesses a more complete technical knowledge of airplanes or is more familiar with the history of aviation in France, in which he has played so great a part."

On Nov. 14th, 1918, Col. Dodd was appointed Chief of the Air Service with the 3rd Army, but was unable to take up the appointment owing to a nervous collapse. After his recovery he was posted in January, 1919, to be in charge of the Paris Office of the Chief of the Air Service, American Expeditionary Force. Later he returned to the United States of America, where he was employed in the Office of the Director of Military Aeronautics, until in July last he took over command of Langley Field, Hampton, Virginia. When flying, on October 5th, from that place to Mineola, New York, he was killed.

Those who had the privilege of meeting Col. Dodd during his brief visit to this country deeply regret his death and offer their sympathy to his brother-officers and to his relatives.

DEMOBILISATION IN THE U.S. AIR SERVICES.

The following figures are extracted from the U.S. "Air Service News Letter," dated Oct. 18th, 1919. The number and ranks of officers demobilised between Nov. 11th, 1918, and Sept. 13th, 1919, are shown :—

	Maj.-Gen.	Brig.-Gen.	Col.	Lt.-Col.	Maj.	Capt.	1st Lt.	2nd Lt.	Total.
Strength on Nov. 11th, 1918.									
D.M.A. ...	1	1	37	81	271	905	4,381	13,011	18,688
B.A.P. ..	0	0	7	19	45	185	280	306	842
Spruce ...	0	0	1	6	22	119	181	695	1,024
Total ...	1	1	45	106	338	1,209	4.842	14,012	20,554
Strength on March 15th, 1919.									
D M.A. ...	0	1	33	86	189	647	2,065	3,848	6,869
B.A.P.	0	0	0	7	16	103	209	209	544
Spruce ...	0	0	1	1	5	24	15	47	93
Total ...	0	1	34	94	210	774	2,289	4,104	7,506
Officers Attached to Air Service.									
	1	1	0	0	5	12	81	111	211
Air Service Officers on Detached Service in the United States.									
	0	0	3	6	14	48	78	134	283
Losses Reported To-day.									
Discharges	0	0	0	0	0	5	18	13	36
Discharges since March 15th, 1919.									
	0	1	8	18	82	466	1,660	2,730	4,965
Total Losses since March 15th, 1919.									
	0	1	15	39	118	527	1,871	2,980	5,551
Additions Reported since March 15th, 1919.									
	0	0	10	13	42	131	171	13	380
Net Losses since March 15th, 1919.									
	0	1	5	26	76	396	1,700	2,967	5,171

Strength To-day. Commissioned Air Service.

Maj.-Gen.	Brig.-Gen.	Col.	Lt.-Col.	Maj.	Capt.	1st Lt.	2nd Lt.	Total.
0	0	29	68	134	378	589	1,137	2,335

P.S.—S.O.S. No. 21,157, Sept. 13th, 1919 :—2 lieutenant-colonels, 3 majors, 33 captains, 41 first lieutenants, 34 second lieutenants. Total, 113.

THE AMERICAN VIEW.

On Oct. 27th Senator Wadsworth, Chairman of the Military Affairs Committee of the Senate asked for a separate Air Service to raise U.S. Service aviation out of the position into which it has fallen since the Armistice.

At the same time he protested against the refusal of an appropriation of £3,000,000 demanded for Military aeronautics. He pointed out how far the United States had fallen behind France and England, both of which countries had recognised the commercial value of aviation.

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To see oursel's as ithers see us."—BURNS.]

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An Army and Navy Balloon Race.

The following account of a Naval and Military balloon race is extracted from the U.S. "Air Service News Letter" dated Oct. 8th, 1919:—

A Free Balloon Race between representatives of the Army and the Navy under the auspices of the Missouri Aeronautical Society was held on Sept. 26th, 1919, starting from St. Louis, Mo. Three balloons were entered representing the Army and three representing the Navy, each of 50,000 cubic feet capacity, using coal gas and each carrying one officer as pilot and one as aid. The object was to cover the greatest distance in any direction from St. Louis, and time was not a factor in the contest. Of the Navy balloons, one was unable to leave the park, owing to a leaking bag; one landed at Menon, Mich.; and the other, piloted by Lieut. Emerson, landed at Stittsville, Mich. Of the Army balloons, one was forced to land in the heart of St. Louis, after 20 minutes' flight; another landed at Green Bay, Wis.; and the third, piloted by Capt. E. P. Phillips with Lieut. B. T. Burt as aid, landed in the waters of Lake Michigan off Death's Door Bluff just north of Door Peninsula. The agreement was that in such an event the point on the shore line crossed just before reaching the water was to be taken as the end of the race, so that the farthest point credited to the Army balloon is the northernmost tip of Door Peninsula, and it appears from the incomplete information at hand that the result is practically a tie between Lieut. Emerson, of the Navy, and Capt. Phillips and Lieut. Burt, of the Army. The officials of the Coast and Geodetic Survey are computing the exact distance and to date the official announcement of the winner has not been made.

It is understood that all of the landings were without incident, except in the case of the Langley Field Pilot, Capt. Phillips and Lieut. Burt, whose landing presented a very narrow escape from drowning.

AIRCRAFT IN PARLIAMENT

HOUSE OF COMMONS.

The following written answers were given on November 3rd:—

ROYAL AIR FORCE—PERMANENT BUILDINGS.

Major-Gen. SEELY, the Under Secretary of State to the Air Ministry, in reply to Rear-Admiral Adair, said: It will be necessary to erect permanent buildings in substitution for hutting or temporary buildings at such air stations as are retained for the after-war Air Force. The number of stations so to be maintained is now under consideration, and I cannot, therefore, give the estimated cost at present.

CIVILIAN DISCHARGES.

Major-Gen. SEELY, replying to Mr. A. Short, said that the answers to the following questions were in the affirmative: That 1,433 civilians at present employed at No. I stores depôt, Kidbrooke, are to be reduced to 450 by the end of the year, and that the total number of between 6,000 and 7,000 employed by the Royal Air Force is to be reduced to 3,480 by the end of the year:

"In order to afford the men discharged better opportunities of obtaining employment, the desirability of spreading the discharges over as long a period as possible has already received very careful consideration. I have received two deputations on the matter and have discussed the situation fully with representatives of the men concerned. As a result the period has been appreciably lengthened I much regret the hardship caused, but it is impossible to still further delay the discharges, in view of the very large reduction in the Air Force. The closest touch is maintained by the Air Ministry with the Ministry of Labour, and advanced information is given of impending discharges."

* * *

The following oral answers were given on Nov. 4th:—

LEAGUE OF OFFICERS.

Lieut.-Col. Sir FREDERICK HALL asked the Secretary for War if a considerable number of officers of the Royal Air Force who volunteered for service in Russia were sent out at short notice and without even the usual embarkation leave; if it was understood that they would be given leave privileges when opportunity occurred to make up for this; and if now on their return these officers, who in many cases have served long periods in the trying Russian campaign without any leave, are being demobilised and struck off the pay-sheets on their arrival back in this country.

Mr. PARKER (Lord of the Treasury): I have been asked to take this question. The reply to the first part is that owing to the urgency of the demands many officers were sent out at short notice. very few, if any, went without a few days' leave. To the second part, that no communication to the effect mentioned was made by the authority of the Air Ministry. The answer to the third part of my hon. and gallant friend's question is that all officers returning from Russia who had not been recommended for permanent or short-service commissions were informed that their demobilisation must be carried out as soon as they returned to this country; that the question of leave for service in Russia was being dealt with; and that if it was decided they were eligible for leave their demobilisation would be post-dated for the period sanctioned in order to enable them to draw pay for that period. Since then it has been decided to grant fourteen days' leave for each six months' service in Russia, and action is being taken to post-date the demobilisation of officers entitled to leave under this ruling. No leave is admissible for service of less than six months in Russia.

Sir F. HALL: May I ask the Secretary of State for the Air Department whether he is aware that in reply to a supplementary question a few days ago he informed me that these officers had not been summarily discharged, and that leave had been granted; and can he say whether if any of these officers have been discharged on their arrival in this country and have not had proper leave, he will take steps to see that in lieu of leave, since they are demobilised, they are paid for that period?

Mr. CHURCHILL: I will inquire into the matter. Certainly they should have their proper leave.

Sir F. HALL: Or pay in lieu of leave?

Colonel YATE: What is their proper leave? Is it not fair that an officer on demobilisation should be given twenty-eight days' grace the same as the men?

Mr. CHURCHILL: I will not say. I should like to refresh my memory.

* * *

The following written answers were given on Nov. 4th:—

SENIOR OFFICERS.

Major WARING asked the Under Secretary of State to the Air Ministry whether there are in command of the Air Force one marshal of the air and five air vice-marshals; if so, will he state what work can be found to keep these officers employed; and whether the command organisation and administration could be performed efficiently by fewer officers of high rank.

Major-Gen. SEELY: The reply to the first part of my hon. and gallant friend's question is that there is no marshal of the air at the present time, but that there are one Air Marshal and five Air Vice-Marshals, corresponding to one Lieut.-General and five Major-Generals. These officers are fully employed, and I do not consider that this small number of senior officers is excessive for so vitally important a service.

TRAINING AND STAFF—EGYPT

Major WARING asked the Under Secretary of State to the Air Ministry whether it is the intention to recommence flying training in Egypt; and, if not, what reduction it is proposed to make in the administrative staffs and units in that country, in view of the fact that only five active flying squadrons are now employed in that command.

Major-Gen. SEELY: It is hoped to recommence flying training in Egypt, but a final decision cannot be taken until the strength and constitution of the after-war Air Force is settled. The administrative staff was reduced early this year to what is considered necessary to deal with the units under the command of the Air Officer Commanding, Middle East, of which command Egypt forms a part

AERODROMES (SHERBURN-IN-ELMET AND TADCASTER).

Major-Gen. SEELY, replying to Major Lane-Fox, said: Both these aerodromes are being used for the storage of standard-type machines and for civil aviation. Other accommodation is not at present available for the storage of these valuable machines, which would deteriorate is not constantly attended to. Tadcaster is also the station of a headquarters unit. Instructions have been given to close down both stations when cleared of stores. Sherburn-in-Elmet will, it is expected, be cleared by March 31st next and Tadcaster by the end of this year. When evacuated by the Royal Air Force both stations will be handed over to the Disposal Board for sale.

* * *

The following oral answer was given on Nov. 5th:—

UXBRIDGE ARMAMENT SCHOOL.

Major-Gen. SEELY, the Under Secretary of State for Air, in reply to Mr. Preston, said: There is no longer any armament school at Uxbridge. If my hon. friend is referring to the Royal Air Force depot at Uxbridge, the personnel on the strength of this depot (which comprises Headquarters, Southern Area, and Headquarters, No. 2 Group) is as follows:—Royal Air Force, officers, 93; airmen, 1,881 (of whom 1,561 are recruits); Women's Royal Air Force, 89 (of whom 49 are in course of being demobilised); civilian subordinates, 33; total, 2,096. It is intended that this shall be a permanent depot.

* * *

The following written answers were given on Nov. 5th:—

FERMOY CAMP.

Major-Gen. SEELY, replying to a question asked by Mr. Grundy, whether he was aware that 106th Squadron, mostly composed of young lads, is still under canvas at Fermoy, county Cork, with only boards to sleep on and a blanket covering, said: No. 106 Squadron was disbanded on October 8th last. However, regarding the detached flight of No. 105 Squadron now stationed at Fermoy, arrangements were made some weeks ago to accommodate this flight in buildings lent by the Army.

GRATUITIES (DEDUCTIONS FOR DEBT).

Major-Gen. SEELY, replying to Mr. Hogge, said: The Order granting war gratuities to airmen provides that, except in the case of airmen serving on a normal Service engagement, the gratuities shall be held liable to meet any public claim, Service debt, or Service claim.

AIRSHIP SHED, EAST FORTUNE.

Lieut.-Col. Sir JOHN HOPE asked the Under Secretary of State to the Air Ministry whether the steel airship shed constructed at East Fortune for R.34, at a cost of £250,000 is to be moved to Howden, or how this shed and five smaller airship sheds at East Fortune are to be disposed of.

Major-Gen. SEELY: It is not the intention to move to Howden Airship Station the rigid airship shed at East Fortune in which the R.34 is at present housed, and to which I assume my hon. and gallant friend refers. The cost of this shed was £160,000. This shed and the other two (not five) small airship sheds on the station, if not required for the purposes of civil aviation, are to be handed over to the Disposal Board.

STATIONS (RETENTION).

Major-Gen. SEELY, replying to Sir J. Hope, said: The retention of certain air stations has been decided upon and in the case of certain other stations a decision is awaiting the final settlement of the peace basis of the Royal Air Force. Construction work has been stopped on all stations other than those which it is definitely intended to retain, except in cases where a small amount of work has been necessary for the safety and preservation of buildings partially completed.

* * *

The following oral answers were given on Nov 6th:—

The Under Secretary of State for Air (Major-Gen. Seely), replying to Major Glyn, said: There have been surrendered by the Royal Air Force since the Armistice:—

- (a) Stations consisting of land only (i.e., landing grounds and camping grounds), 124.
- (b) Stations consisting of land and buildings (including ten transferred to other Departments), 122.
- (c) Stations at which aerodromes have been released, whilst buildings are still required for Royal Air Force purposes, 6.

Arrangements are being made whereby civilian caretakers will, pending the sale of buildings, be placed in charge of stations cleared of Royal Air Force material, vacated by Royal Air Force personnel and handed over for disposal. In some cases Royal Air Force personnel remain in charge pending the appointment of civilian caretakers and in a few other cases the local police have been requested to exercise supervision over empty buildings.

It is a fact that when the Disposal Board are unable to take over stores the Royal Air Force personnel has to be retained to look after them, and that of course adds to the charge on the R.A.F., but the matter is now being finally considered, and I hope we shall avoid any delay in the future.

Major-Gen. SEELY, replying to Mr. Billing, said: The question as to which is the more costly is a very elaborate calculation between the R.A.F. and the civilian control, but there is obviously an advantage in handing it over to the civilian personnel in order that the small R.A.F. personnel retained may be engaged in their proper duties.

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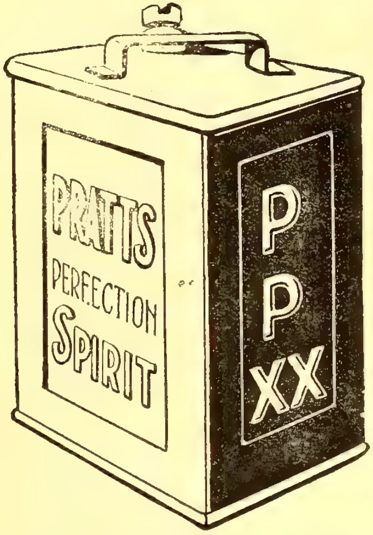

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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

THE AERIAL MAIL FIASCO.

The first regular international air mail service in the world should have begun on Nov. 10th between London and Paris. The first regular air mail service in the world started in America over a year ago and has been flourishing ever since, but that is not an international service. Nor was the service carried out by the R.A.F. between Lympne and Cologne an international service, as the letters were only taken to and from the British Army and R.A.F. in occupation in Germany. Mails were carried from London to Paris by air during the late railway strike in this country, but that was no regular service.

The following announcement was made by the Post Office on Nov. 6th :—

> The Postmaster-General has made arrangements for the establishment of an air mail service between London and Paris. The service will extend to Paris, France generally, Italy, Spain, Switzerland, etc., and will begin on Monday (Nov. 10th).
>
> Registered and unregistered letters, postcards, packets of printed papers and commercial papers, and samples will be accepted for transmission. Parcels and insured correspondence will not be accepted. A special fee at the rate of 2s 6d. per oz. will be charged in addition to the ordinary foreign postage and registration fee, where payable.
>
> Correspondence for transmission by the Air Mail Service will be accepted daily (except Sundays) at the London post offices indicated below. Letters must be handed over the counter, and the latest times of posting will be as follows :—
>
> G.P.O., King Edward's Building (11 a.m.), Threadneedle Street (10.45 a.m.); Lombard Street (10.45 a.m.); Parliament Street (10.45 a.m.); Charing Cross (10.50 a.m.); W.C. District Office (11.10 a.m.); W. District Office (11.15 a.m.); S.W. District Office (10.40 a.m.).
>
> Registered correspondence must be at the post offices five minutes before the above times.
>
> Arrangements will be made at certain provincial post offices for the acceptance of correspondence intended for transmission by the Air Mail Service. Such correspondence will be forwarded as express letters to London and will be dispatched by aeroplane on the following morning.
>
> The correspondence will be conveyed to Paris by aeroplane, arriving in normal conditions in time for delivery in Paris in business hours the same day. Correspondence addressed to Paris will thus be accelerated by about 16 hours. Correspondence for places beyond Paris will be forwarded by the next available train. Correspondence for places in France will be delivered by express on arrival at the office of destination; correspondence for countries beyond France will normally be accelerated by 24 hours.
>
> In the inward direction, correspondence posted in Paris in the morning will normally reach London in time for delivery in Central London (i.e., E.C., W.C., E.1, N.1, N.W.1, W.1, W.2, S.W.1 and S.E.1) during business hours on the same day. It will be delivered immediately on arrival by express messenger without additional charge. Correspondence for provincial towns will be forwarded by the next dispatch from London and will usually gain 24 hours in delivery
>
> If it is known in advance that flight will be impossible on any particular day, a notice to that effect will be exhibited at the offices mentioned above.
>
> Responsibility for registered correspondence will be admitted under the usual conditions, otherwise correspondence will be accepted at sender's risk.

The Post Office "communiqué" calls for comment on more points than one. On the American aerial mail services such a saving in money (apart from time) was effected over the ordinary train transport that in the summer of this year the rate of postage was reduced to that of all other first-class matter.

It is certainly a sound scheme to fix such a rate that will bear reduction, but to make the rate 2s. 6d. per oz. is sufficient to prevent economical firms and all private persons from sending their mail by the air service. If the rate was decided upon by the Postmaster-General, it would almost appear that he wishes to show his critics that an air mail service is impossible.

If the rate was fixed by Aircraft Transport and Travel, Ltd., why do they charge 2s. 6d. per *oz.* when they will carry freight to Paris at the rate of 3s. 9d. per *lb.* if it weighs over 150 lb. and is carried for five or six days in the week?

"Parcels . . . will not be accepted." This seems fairly obvious, as no one would send parcels to Paris at 2s. 6d. per oz. by post when they may be sent at—at the most—7s. 6d. per lb. by the Airco service.

It seems absurd to have eight stated Post Offices only at which letters may be posted. There can be few difficulties in the way of collecting the letters from any Post Office where they would be specially stamped "air mail." The sorting would delay the letters, but they could always be posted in time to catch next day's mail.

Motor-cyclists will collect the air mail at the various stated post offices and convey it to Hounslow Aerodrome. The Airco machine will arrive at Le Bourget at approximately 2.45 p.m., and the mail again will be conveyed by motor-cycle to Paris, where the letters should be delivered by about 4 p.m.

The air mail will reach Paris in time to be put on the express trains leaving for Italy and Spain at about 8 p.m. or 9 p.m. Thus the letters will be delivered twenty-four hours earlier than by the ordinary post.

Those who have done any flying will know that it is seldom possible to know if the weather will enable a flight to be carried out some hours later, therefore one hopes that a notice that the flight is impossible will be exhibited on every occasion when the service has to be cancelled.

The Bréguet biplanes of the Compagnie Générale Transaérienne are to carry the air mails as well as Aircraft Transport and Travel, Ltd.

One can only hope that a sufficient number of persons will send their correspondence by the air mail service to justify its existence, and that the high rate of postage will be reduced.

Lieut. McMullin (ex-R.A.F.) left Hounslow Aerodrome at 12.30 p.m. on Nov. 10th with eight bags of mails, although the aerodrome commander reported the weather as "totally unfit." The machine was embellished with "*G.R.*" streamers on struts and tail. After staying in the air for five minutes the pilot landed and reported complete invisibility. It is extremely unfortunate that the air mail service has been started in November, the worst flying month of the year.

CIVIL AERODROMES

The Air Ministry announced on Nov. 8th that the following lists of aerodromes are issued as an addition to or amendment of the lists recently published.

LIST C. (Aerodromes temporarily retained for Service purposes.)

AMENDMENTS.

The following aerodromes have been transferred to List E and are now published in that list :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Leighterton	Tetbury	Stroud
Lopcombe Corner	Grateley	Salisbury
Rendcomb	Foss Cross	Cirencester

LIST D.—(a) Aerodromes licensed for all types of Aircraft.

Aerodrome.	Location of Aerodrome	Nearest Large Town.
Cricklewood	Cricklewood	London

LIST D.—(b) Aerodromes licensed as "Suitable for Avro (504K) and similar types of aircraft" only. Except in very few instances accommodation does not exist. The licences have also in the majority of cases been issued for limited periods only.

Aerodrome.	Location of Aerodrome.	Nearest Large Town.
Billesley	Yardley Wood Road	Birmingham
Altrincham	Woodlands Park	Altrincham
Rugby	Polo Ground, Spring Hill Farm	Rugby
Chester	Race Course	Chester

A VISIT TO AMERICA.

Major-General Sir F. H. Sykes, G.B.E., K.C.B., C.M.G., Controller-General of Civil Aviation, has arranged to visit Canada, the United States, and, if possible, Newfoundland. The object of his journey relates to the development of international civil flying.

THE CONTINENTAL AIR SERVCES.

THE AIRCO SERVICE.

The London-Paris service has now been running for 11 weeks. Out of 166 scheduled flights, 149 have been successfully accomplished. Eight flights have been prevented altogether, owing to weather. Six flights have been interrupted owing to weather and three interrupted owing to mechanical defect.

(*Continued on page 1691.*)

VICKERS LIMITED

THE TRANSATLANTIC FLIGHT
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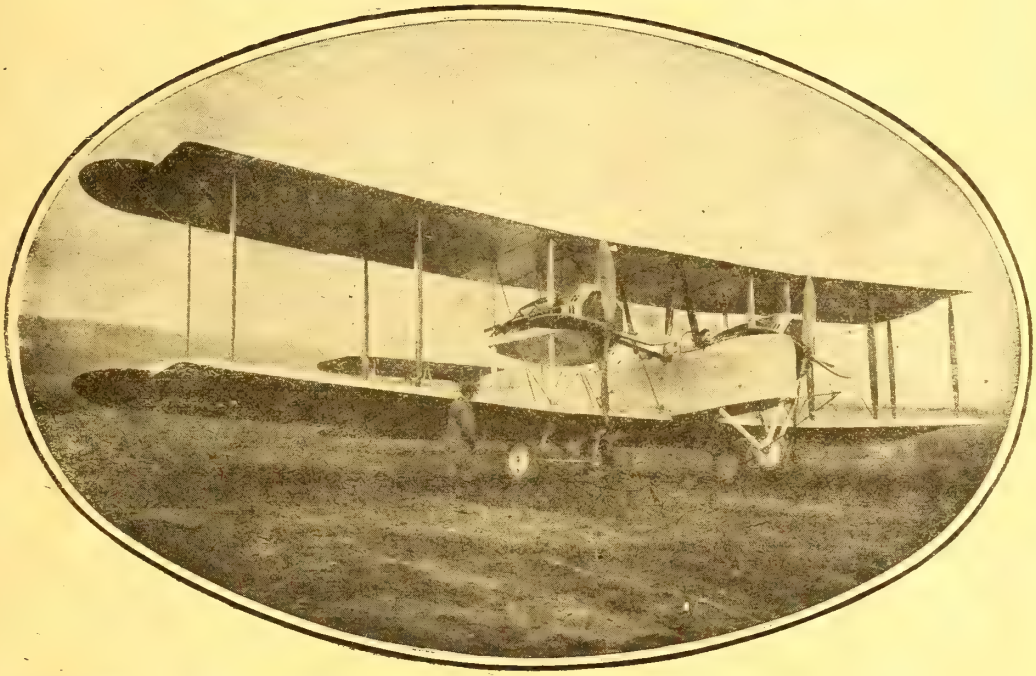

The first direct Flight from Newfoundland to Ireland (1,900 miles) was accomplished by this Aeroplane in 15 hrs. 57 mins. 4 tons of Petrol and Oil were used.

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To "Aeroplane" Subscribers.

During the past three months the "AEROPLANE" has offered to yearly subscribers the right to purchase copies of "FLYING COLOURS," McCudden's "FIVE YEARS IN THE R.F.C.," Richthofen's "RED AIR FIGHTER," and Gill's "THE AERIAL ARM" at half-price.

Subscribers have freely taken advantage of the opportunity, but several have pointed out that they already have these books, and are therefore debarred from participating in the privilege.

In order to meet their views the "Aeroplane" is prepared to extend the offer. Any books published by the "Aeroplane" and General Publishing Co., Ltd., to a value not exceeding £2 2s., will be sent to yearly subscribers for half the published price.

THE "AEROPLANE" LIST COMPRISES.

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Saundby's	FLYING COLOURS (Ed. de Luxe)	2	2	0	net.
	,, (Popular Ed.)		15	0	,,
McCudden's	FIVE YEARS IN THE R.F.C.		7	6	,,
Richthofen's	RED AIR FIGHTER (2nd Edition)		3	6	,,
Gill's	THE AERIAL ARM: Its functions and developments		6	6	,,
Sylvester's	DESIGN AND CONSTRUCTION OF AERO ENGINES		6	0	,,
Mortane's	SPECIAL MISSIONS OF THE AIR. (The exploits of Védrines, Guynemer, Georges Bourdet, Paolacci and others in dropping spies by aeroplane behind the German lines)		3	0	,,
Swinton's	£.S.D. OF FLYING		6	0	,,
Blakeney's	HOW AN AEROPLANE IS BUILT		5	0	,,
Butler's	PLAIN IMPRESSIONS		2	6	,,
	THE REVELATIONS OF ROY: Air Mechanic (With apologies to Artemas)		1	0	,,
Hume's	NURSAIRY RIMES (Illustrated by H. R. Millar)		2	6	,,

Subscribers through a Newsagent must sign the form below and either post it to the Publisher with remittance for the books wanted, or hand it to the Newsagent to forward.

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THE WEEKLY COMMENTARY.

The description of the work of the Experimental Depot at Grain is continued in this issue.

Two seaplanes of some interest are described, and the first authentic account of the two "Kittens" with the two-cylinder A.B.C. engines is given. These machines are fairly well known by name, but the accounts which have been circulated concerning them have been very incomplete and generally inaccurate.

Illustrations and descriptions—parallel to those given last week of the Friedrichshafen machines—of the Gotha seaplanes are given in this issue by Mr. Hildesheim.

Gotha seaplanes were less heard of in this country than were those of the F.F. Company, but there seems to have been little difference in the number of types produced by the two firms.

Illustrations of a number of recent Roland machines, manufactured by the L.F.G. Co., of Adlershof, appear on page 1685 *et seq.*

Most of the machines are of the single-seat fighter type, of distinctly German appearance, and many of them are—even for German machines—extremely eyeable.

THE WORK OF THE MARINE EXPERIMENTAL AIRCRAFT DEPOT, ISLE OF GRAIN.—(*continued.*)

BY CAPT. W. H. SAYERS, LATE R.A.F.

Very shortly after the laying down of the original designs of P.V.4, Port Victoria was asked by the Air Department to submit a design for a single-seat seaplane to a specification known as N.2.B. This called for two 65-lb. bombs carried within the fuselage, four hours' fuel, machine-gun and ammunition, an alighting speed not exceeding 40 knots and a top speed of 85 knots at 6,500 ft. The engine specified was the same 150-h.p. Smith "Static" as proposed for P.V.4.

Assuming the engine performance, it was believed that the conditions could be complied with, and two designs were got out to meet the case.

P.V.5 AND P.V.5A.

One—known as P.V.5—was a modified P.V.2, with a large upper wing and a small lower one, rigid bracing to the chassis and no lift wires, a high-lift wing section and a wing loading of 10 lb. per sq. ft.

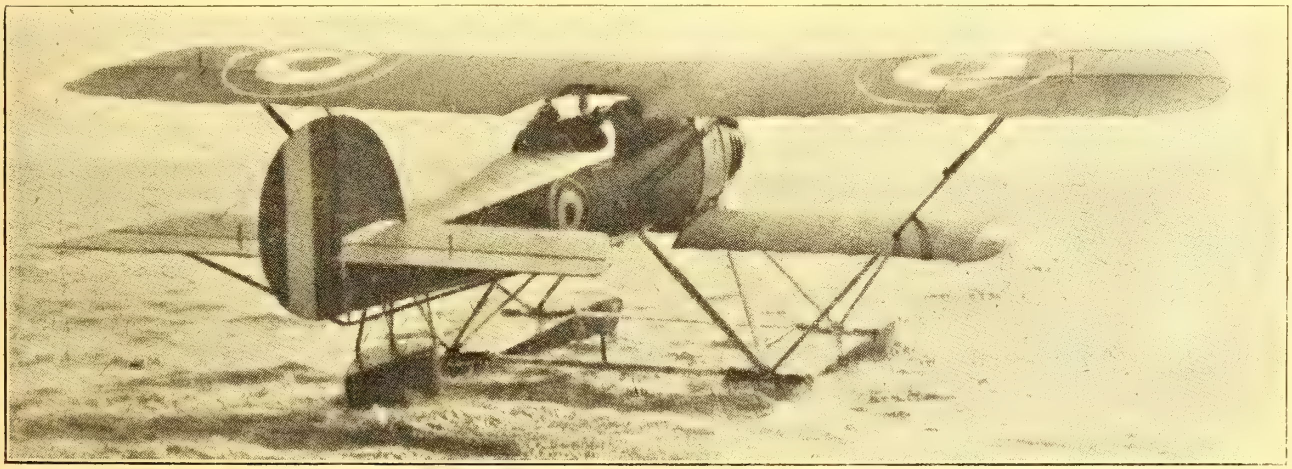
The second design—P.V.5a—was of normal design, equal upper and lower wings and cable bracing. The wing loading was considerably reduced and a high-speed wing section was used. The intention was to make as close a comparison as possible between the wing-and-a-half type with heavily loaded wings and the normal type of biplane, and to determine whether in full-size work the hopes of the designer for the former type would be fulfilled.

Towards the end of 1916 both these machines were in an advanced stage of construction, and with P.V.4, were being held up by the non-arrival of their engines.

At that time P.V.4 was considered to be important, and Wing Commander Aldwell (as he then was) paid a visit to the Engine Section of the Air Department and made urgent representations in the matter.

A promise of engines immediately was forthcoming which materialised some week or so later in the form of one 150-h.p. Hispano-Suiza and one 190-h.p. Rolls-Royce. Neither of these two engines could by any means be fitted to P.V.4, but the 150 h.p. Hispano-Suiza was eventually, after sundry modifications, installed in P.V.5.

At the fusion of the Supply Departments of the R.N.A.S.

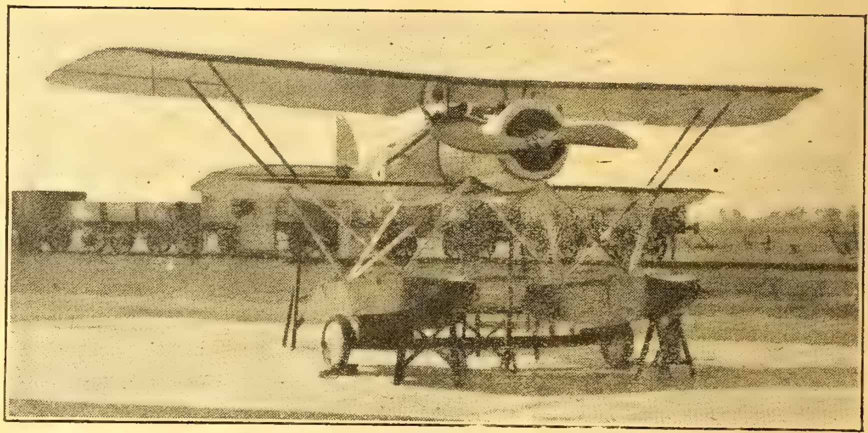


P.V.5 (150 h.p. Hispano-Suiza engine) afloat.

and the R.F.C. under the Air Board the policy of experimental aircraft building at Grain was very nearly abandoned, but it was decided to carry on P.V.5 and to drop P.V.5a.

As originally designed P.V.5 and P.V.5a were to be fitted with Linton Hope type floats, but in the case of P.V.5 these were abandoned in favour of floats of pontoon construction with outwardly sloping bottoms intended to produce the shock-reducing qualities of a V-bottomed float and at the same time keep the spray out of the airscrew.

This modification was due to Squadron Commander (now Wing Commander in command at Grain) Busteed, and fulfilled the expected purposes admirably. These particular floats were, however, extremely unfortunate.

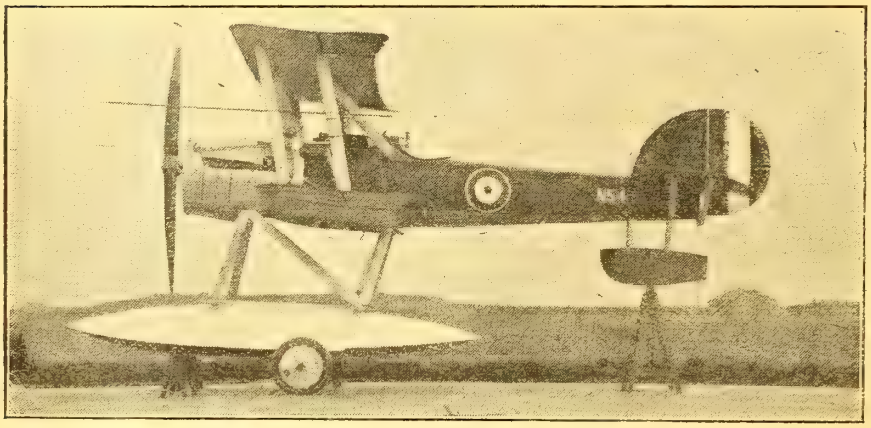


Three-quarter Front View of P.V.5.

On alighting after her first flight some square feet of bottom ripped off one float and the machine capsized. She was salved with surprisingly little damage and rebuilt. Serious trouble was encountered thereafter in getting her onto the special trolley demanded by the shelving float bottom, as unless the floats were in exactly the right place very serious bending stresses were set up in the cross-tubes of the chassis, and through them in the whole wing structure.

For similar reasons it was impossible to beach the machine.

Eventually, at the end of an official test flight, the machine turned over on her nose while taxying—an accident generally ascribed to the floats being insufficiently far forward, but which was actually caused almost entirely by a singular and inexplicable error of judgment on the part of one of the finest seaplane pilots in Britain.



Side View of P.V.5a (200 h.p. Hispano-Suiza).

This machine was, apart from her unfortunate floats, extremely satisfactory. The pilot's view was good, her flying qualities were praised by all who flew her, and she was unusually comfortable. The performance was not up to that of the specification, partly because trials were made with an airscrew which held the engine speed down, but mainly because the engine and mountings were much heavier than those of the original design.

The specification following gives particulars of P.V.5 :—

Type of machine	Seaplane Scout
Name or type number of machine	P.V.5
Purpose for which intended	Fighter and light bomber
Span	top, 32 ft.; bottom, 21 ft.
Gap	4 ft.
Overall length	25 ft. 6 in.
Maximum height	9 ft. 9 in.
Chord	top, 6 ft.; bottom, 3 ft. 6 in.
Total surface of wings	245 sq. ft.
Engine type and h.p.	Hispano-Suiza, 150 h.p.
Weight of machine empty	1,788 lb.
Disposable load apart from fuel	375 lb.
Total weight of machine loaded	2,456 lb.
Load per sq ft.	10 lb.
Weight per h.p.	16.2 lb.
Tank capacity in gallons	petrol 36; oil 4

Performance—

Speed at 4,000 ft.	82 knots.
Landing speed	40 knots.
Climb—	
To 9,000 ft.	35 min.

P.V.5a was eventually completed with a 200-h.p. Hispano and very considerably improved on the specification figures for performance, and was quite a good machine.

Both in view and in manœuvring qualities P.V.5 was far the better of the two, and had she been fitted with the same engine—as it was intended—would have had a better all-round performance.

However, by the time these machines were tested it had been officially decided that the type was not needed for service purposes. Large numbers of machines in every way inferior to either of these were later ordered and used for the purpose for which these were designed—but that was only to be expected.

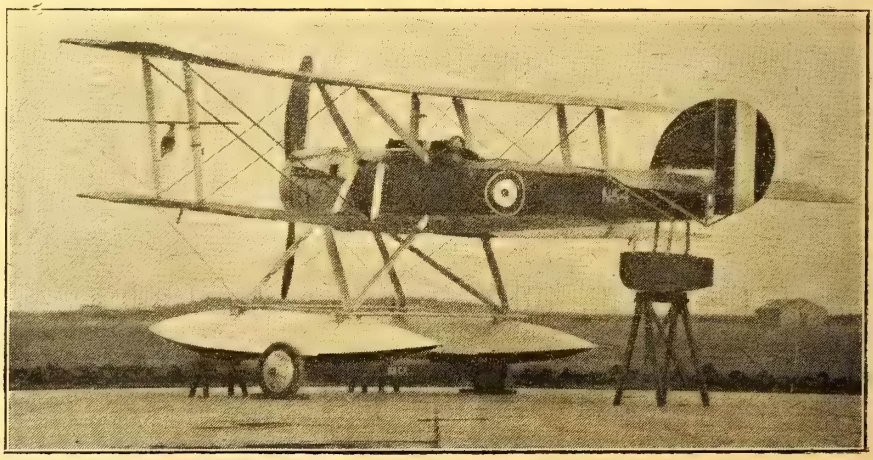
The main dimensions, etc., of P.V.5a are given below :—

Specification.

Type of machine	Seaplane Scout
Name or type number of machine	P.V.5a
Purpose for which intended	Fighter and light bomber
Span	33 ft. 1 in.
Gap	5. ft.
Overall length	26 ft. 9 in.
Maximum height	13 ft. 1 in.
Chord	5 ft.
Total surface of wings	309 sq. ft.
Engine type and h.p.	Hispano-Suiza, 200 h.p.
Weight of machine empty	1,972 lb.
Disposable load apart from fuel	245 lb.
Total weight of machine loaded (without bombs)	2,518 lb.
Load per sq. ft.	8.15 lb.
Weight per h.p.	12.6 lb.
Tank capacity in gallons	petrol, 41; oil, 5

Performance—

Speed at 2,000 ft.	89 knots.



Three-quarter Rear View of P.V.5a. The attachment to the interplane struts is a special Pitot tube for speed tests.

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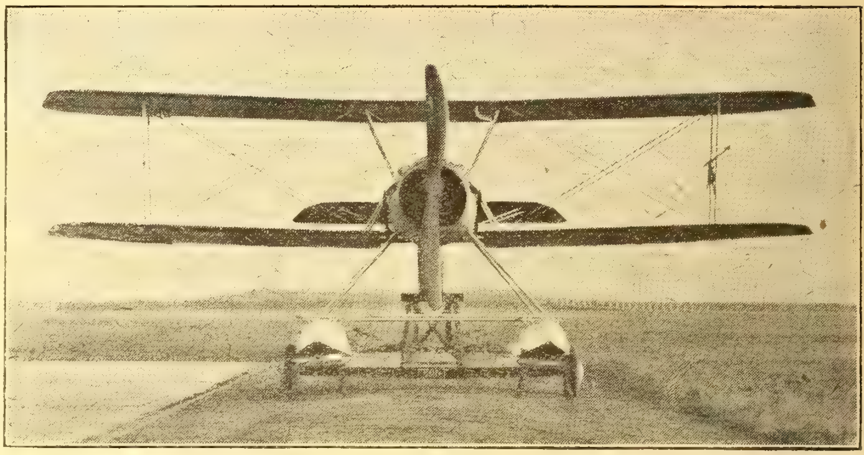
Speed at 10,000 ft.	87 knots
Landing speed	45 knots
Climb—	
To 10,000 ft.	17 min. 40 sec.

THE KITTENS

During the period of construction of P.V.5 and P.V.5a Port Victoria was asked to report upon the possibilities of building a very small reasonably high performance single-seater fitted with a two-cylinder A.B.C. engine of 45 h.p.

The general idea was to produce a machine sufficiently small to be carried by torpedo-boat destroyers and other small craft and capable of getting off a very confined deck space. The Experimental Flight at Eastchurch, under the command of Squadron Commander Busteed, were set the same problem.

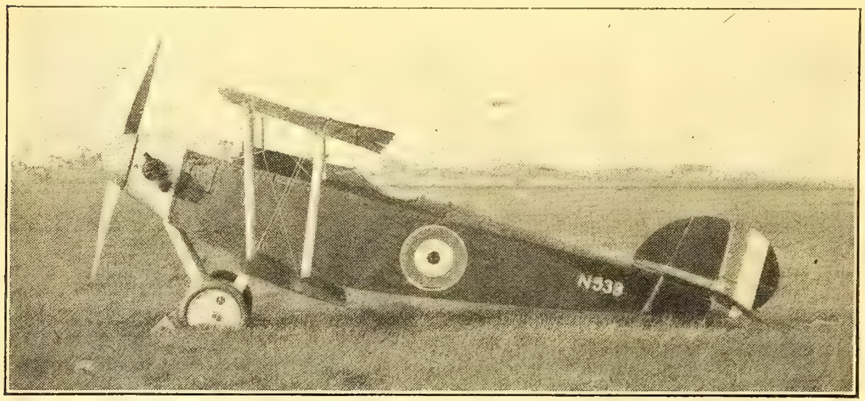


Front View of P.V.5a with 200 h.p. Hispano-Suiza engine.

Both Port Victoria and Eastchurch produced designs and were instructed to proceed with the construction thereof. When Commander Busteed migrated from Eastchurch to take command of Port Victoria he imported the partially built Eastchurch machine, and both were completed, one alongside the other, in the Port Victoria workshops.

These machines were known as the Grain and the Eastchurch "Kittens," P.V.7 and P.V.8—the missing P.V.6 being represented by the preliminary lay-out of a high-speed land scout which never proceeded further.

The two machines differed vastly. P.V.7 continued the Port Victoria tradition of the wing-and-half arrangement, combined with a relatively high loading on a high-lift wing. Unfortunately the wing section developed for this case was by no means a success and the machine was not really satisfactory. The design was based on a total loaded weight, with pilot, gun, ammunition, and three hours' fuel, of 520 lb., a figure laughed to scorn by the technical advisers to the Air Department at the time, but which was in fact somewhat higher than the realised one.



The Grain "Kitten" (P.V.7) with A.B.C. "Gnat" engine.

Very ample stabilising surfaces were fitted, as it was feared that the machine would be uncomfortably quick in her movements, and, apart from the special wing curve, great care was taken to avoid novel and untried features in the design.

The Eastchurch design was based on a much higher total weight and much lighter wing loading.

Equal top and bottom wings were fitted with an enormous stagger, and the single plank interplane strut used on the Sopwith triplane was adopted.

No fixed tail plane was provided in the original design, but a balanced elevator of Morane-like aspect was fitted.

No springing was fitted to the chassis, large diameter tyres being relied upon, and the main lift wires were taken to the axle centre.

As with most of the other Port Victoria-built machines, the engines failed to materialise, and eventually, instead of the 45 h.p. geared-down engines, 35 h.p. ungeared engines of the same make were fitted.

This involved some considerable modification to the engine mounting in both cases, as the engines had to be raised some 6 in. above their intended position to bring the thrust line into its proper place and to give adequate airscrew clearance. The Grain design was completed first and created rather a sensation. The performance was fair, though not up to expectation, and the machine was very difficult to handle on the ground.

She was eventually fitted with a new set of wings of tried section, the chassis was moved forward to prevent tail-chasing on the ground, and the tail plane was modified to get over a considerable tail heaviness found during her trials.

As far as can be ascertained the machine has never been flown since these alterations were made.

The Eastchurch machine on her first flight showed serious longitudinal unsteadiness, and part of the elevator balance was cut off and a small fixed surface was added. The result of this alteration was so marked as to lead to a belief that overbalancing of the elevator was the real trouble—as the total fixed surface added was less than 2 sq. ft.

With this alteration the machine was remarkably successful. In spite of a very considerably greater weight the performance was better all round than that of the Grain design, and the machine was extremely easy to fly.

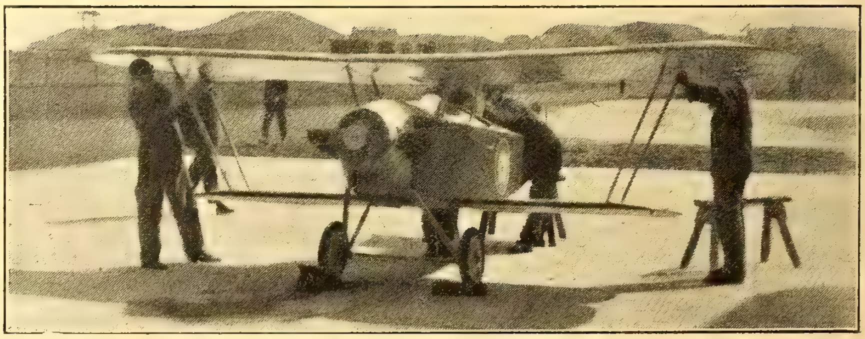
Owing to the Sopwith triplane type of struts used, and some resemblances of detail fittings to Sopwith practice, this machine was very commonly believed to be a Sopwith product, and has actually been described in official publications as the "Sopwith Kitten." This, therefore, seems an opportunity for giving the credit to the actual designer, the late Capt. G. H Millar, R.A.F., who, as Lieut., R.N.V.R., was Commander Busteed's chief technical officer at Eastchurch, and who joined the staff at Port Victoria on Commander Busteed's succession to that command.

These two machines were completed in the summer of 1917.

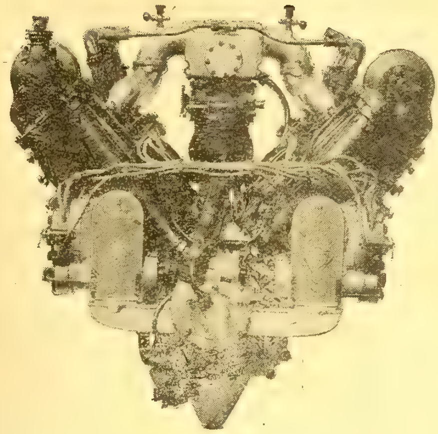
The specifications of the two "Kittens" are as follows:—

THE GRAIN "KITTEN."

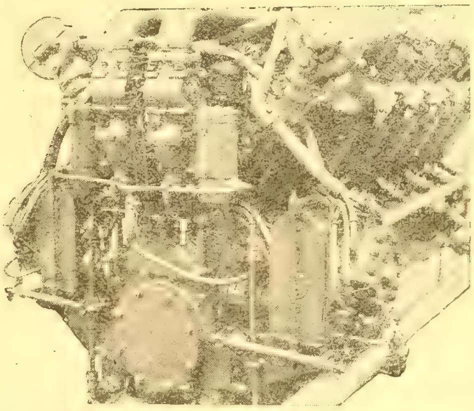
Type of machine	Small scout.
Name or type number of machine	P.V.7 (Grain Kitten).
Purpose for which intended	Shipboard use.
Span	top, 18 ft.; bottom, 12 ft. 7 in.



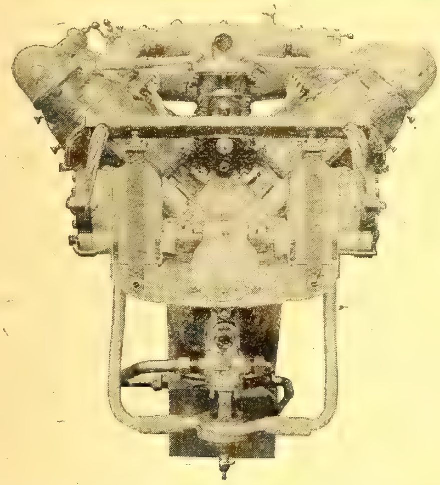
Running the engine of the Grain "Kitten."



200 H.P. 8-cylinder Sunbeam "Arab" engine fitted with type AV8s B.T.H. Magnetos.



275 H.P. 12-cylinder Rolls-Royce "Falcon" engine fitted with type AV12s B.T.H. Magnetos.



200 H.P. 8-cylinder Wolseley Hispano-Suiza "Viper" engine fitted with type AV8s B.T.H. Magnetos.

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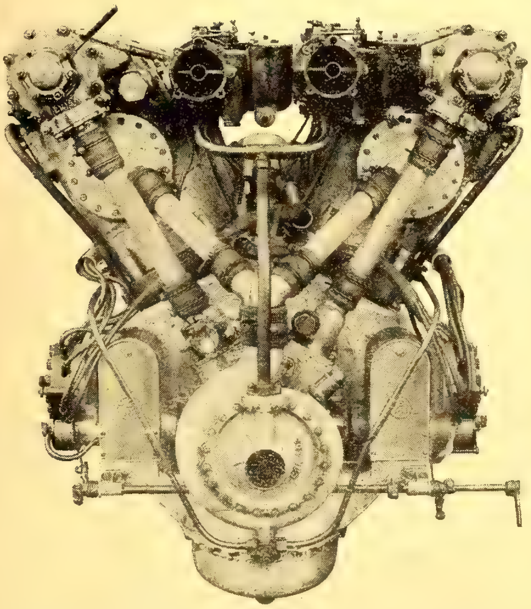
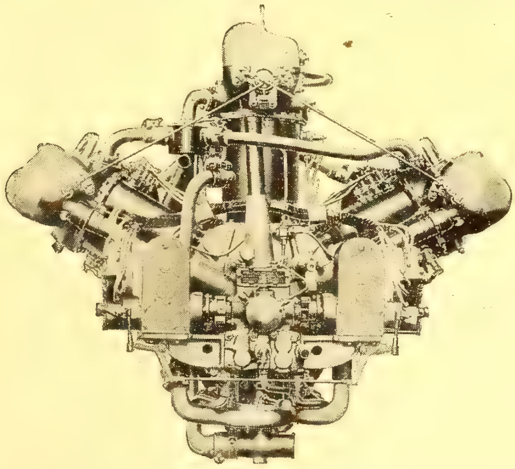


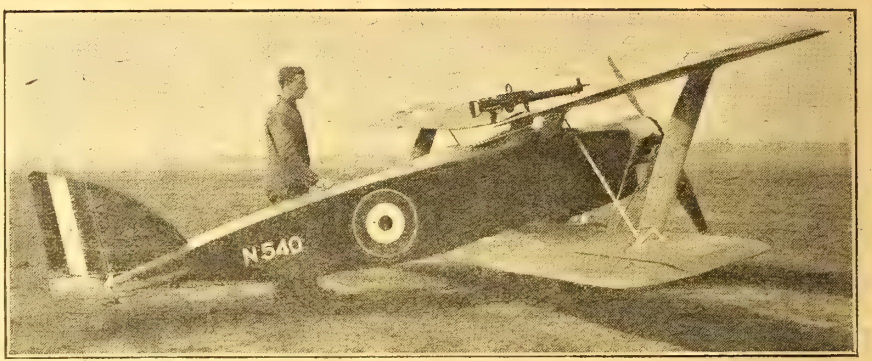
650 H.P. 12-cylinder Siddeley-Deasy "Tiger" engine fitted with type AV12s B.T.H. Magnetos.



450 H.P. 12-cylinder Napier engine, fitted with type AV12s B.T.H. Magnetos.

Gap ....3 ft.
Overall length ....14 ft. 11 in.
Maximum height ....5 ft. 3 in.
Chord top, 3 ft. 6 in.; bottom, 2 ft. 6 in
Total surface of wings ....85 sq. ft.
Engine type and h.p.
A.B.C. 35 h.p. "Gnat."
Weight of machine empty .... .272.5 lb.
Disposable load apart from fuel 175 lb
Total weight of machine loaded 405 lb
Load per sq. ft. ....6 lb.
Weight per h.p. ....14.1 lb.
Tank capacity in gallons
petrol, 4; oil, 1

Performance—
Speed at 2,000 ft ....77 knots.
Landing speed ....35 knots.
Climb—
To 12,000 ft. ....35 min.



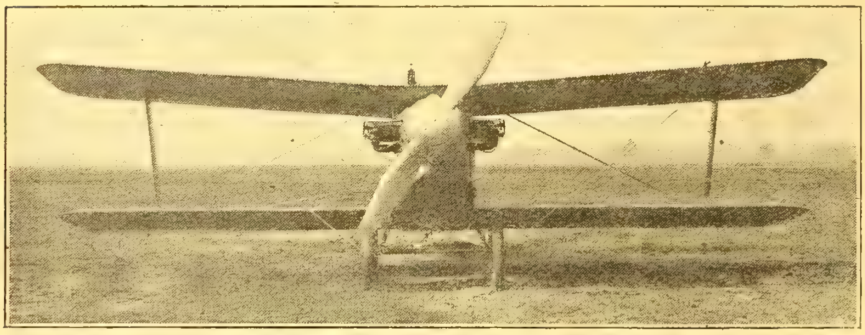
Side View of the Eastchurch "Kitten" (A.B.C. "Gnat" engine).

THE EASTCHURCH "KITTEN."

Type of machine ....Small scout.
Name or type number of machine, P.V.8 (Eastchurch Kitten).
Purpose for which intended ....Shipboard use.
Span ....19 ft.
Gap ....3 ft.
Overall length ....15 ft. 7½ in.
Maximum height ....5 ft. 5 in.
Chord ....3 ft.
Total surface of wings ....106 sq. ft.
Engine type and h.p.
A.B.C. 35 h.p. "Gnat."
Weight of machine empty ....340 lb.
Disposable load apart from fuel 150 lb.
Total weight of machine loaded 586 lb.
Load per sq. ft. ....5.5 lb.
Weight per h.p. ....16.7 lb.
Tank capacity in galls......petrol 9; oil 1

Performance—
Speed at 2,000 ft. ....82 knots
Landing speed ....40 knots
Climb—
To 10,000 ft. ....20 min.

(To be continued.)



Front View of the Eastchurch "Kitten."

BRITISH INTERNAL COMBUSTION ENGINES, LIMITED.

Mr. R. Henry Wheeler, presiding at the first annual general meeting of British Internal Combustion Engines, Ltd., said:—

"I would remind you that the company was only registered in April, 1918, and I think you will agree that it has already given a very good account of itself. As the company pays the income tax up to 5s. in the £ on the dividends, they are equivalent to £9 7s. 6d. per cent. on the preference and £6 5s. per cent. on the ordinary shares.

"As you are aware, the Green Engine Co., Ltd., is the proprietor of the British, Foreign, and Colonial patents under which the Green engine is designed and manufactured. This engine was famous as the winner of the Naval and Military Aeroplane Engine Competition, winning the first prize of £5,000 for the best aeroplane engine immediately prior to the war, and it is very significant that in the first race after the war its 35-h.p. engine beat all competitors in the Aerial Derby handicap at Hendon in Messrs. A. V. Roe and Co.'s new 'Baby Avro' aeroplane.

"As a result of its recent remarkable performances many inquiries have been received and some very satisfactory business has already been concluded, justifying the forecast made at our statutory meeting that the Green engine would again take a foremost place in the great future of aircraft of all kinds for naval, military, and commercial purposes. These engines are now standardised in five sizes—viz., 35, 100, 160, 275, and 450 h.p., and in addition an engine of 1,000 h.p. is in course of completion.

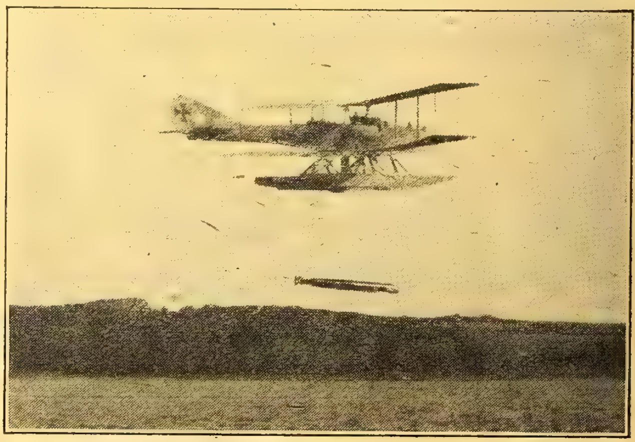
"You will be pleased to know that Green engines were fitted into many of the submarine-chaser coastal motor-boats for the Admiralty, and proved a great success in the Zeebrugge and Ostend raids. Mr. G. Green, the designer of these engines, is a successful inventor who is always at work exclusively in our interests, and he may well be proud of the results obtained. Further developments are pending in connection with Green engines which should prove to be a source of considerable additional profit to this company.

"The position of the Aster Engineering Co., Ltd., may be judged from the fact that since we became interested its dividend has been doubled. This company makes the 'Aster' internal-combustion engine, which is well known all over the world as a power unit in connection with road transport, electric generating sets, electric welding, wireless telegraphy, salvage work, ships' lighting, etc.

"The Aster Engineering Co., Ltd., is fully booked up with profitable orders for more than a year ahead, and is further developing the manufacture and extending the markets both here and abroad for its own specialities. This settled policy has created a most valuable goodwill, which does not figure among the assets in its balance-sheet. The works are being enlarged as rapidly as possible, and additional machinery is being installed.

"Some idea of the importance and great future of the internal-combustion engine in the matter of road transport has recently been brought home to the public, and now that an ample supply of petrol, paraffin, and crude oil is assured the demand for various types of internal-combustion engines as power units for all purposes, both on land and sea, is bound to increase year by year. Our associated companies are pioneers in the development of the internal-combustion engine for aviation, road transport, and the generation of electricity, and we are therefore in a position to take full advantage of the great future before this industry.

"The energy and foresight of Mr. Sydney D. Begbie and Mr. Fred May, the managing directors of the Aster Engineering Co., Ltd., and the Green Engine Co., Ltd., respectively, are mainly responsible for the present satisfactory position. The enthusiasm and keenness of these gentlemen are reflected in the attitude of their staffs and workmen, with whom they are in constant and direct touch, and the results speak for themselves."



The Friedrichshafen Type F.F.35 Seaplane dropping a Torpedo.

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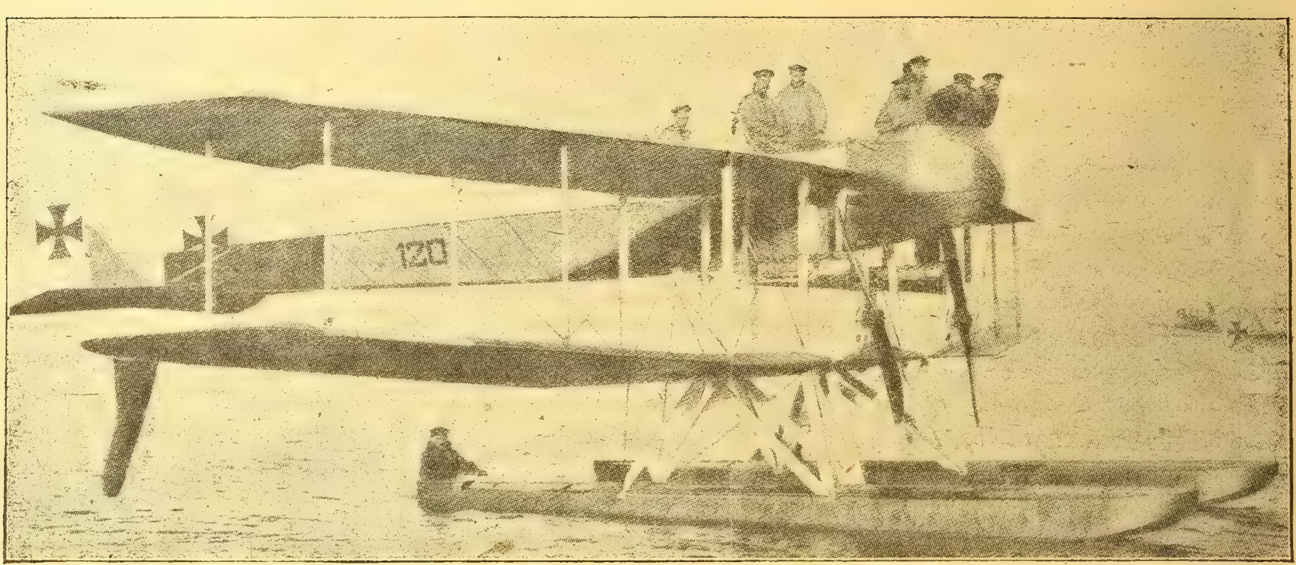
THE GOTHA SEAPLANES.

By Erik Hildesheim.

The Gotha works came to the fore some time before the war as the aircraft department of the established waggon works, and concentrated their activities on the then favourite Taube monoplane model, their pilot Schlegel being second winner in the "Nationalflugspendi" 24 hours' overland flight.

The Gotha works took up the quantity production of the Ursinus twin-engined biplane, built experimentally at Darmstadt, and this type was also turned out as a seaplane and developed into the torpedo-carrying and long-distance patrol aircraft.

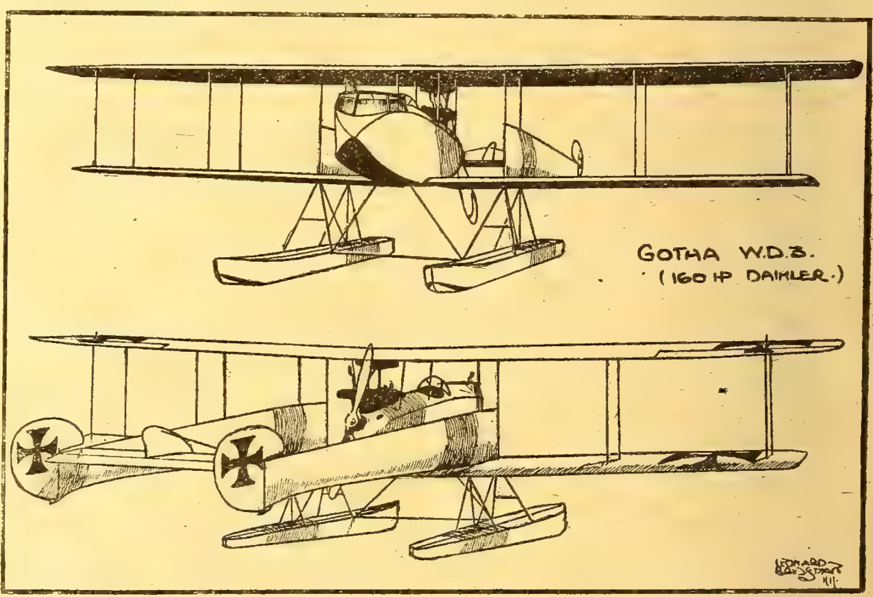


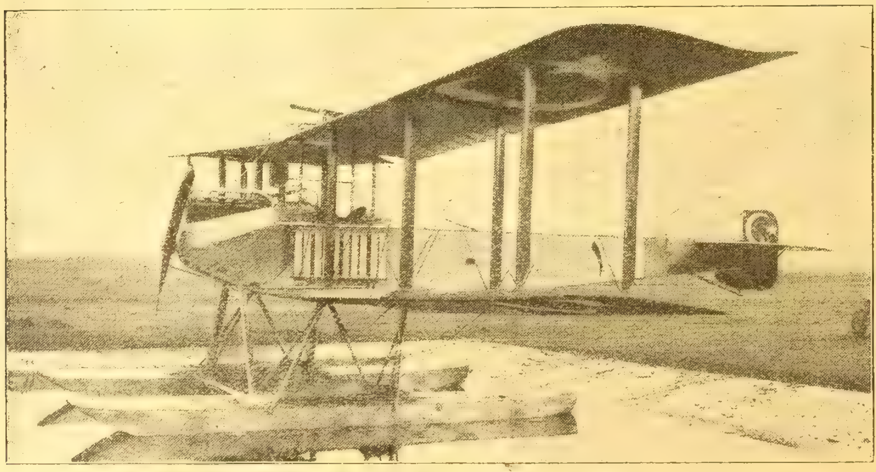
The Ursinus Seaplane (two 160 h.p. Mercedès Motors), built by the Gotha Works.

Early in the war the 100-h.p. Gnome-engined Falcon scout was built by the Gotha works as one of the first German replies to the British scout, but the name of Gotha has been chiefly associated with the twin-engined bomber, the first aircraft of that type to be employed by the Germans. It is not usually known that at Gotha was built the first experimental 3-engined giant biplane for Count Zeppelin. This afterwards developed into the well-known Staaken model.

Although the Gotha works, situated in the centre of Germany, were the only German aircraft enterprise not having a seaplane branch of their own, they were large contractors to the German navy, beside being the chief furnishers to the Turkish naval air service. In 1914 the Gotha works arranged with the city of Rostock to have a plant and sheds erected near Breitling, which were used when preparing for the Warnemünde seaplane competition, for which two 150-h.p. Benz and Rapp-engined Gotha seaplanes were entered.

When the war broke out this plant was taken over by the Navy and formed the nucleus of the present Warnemünde air station.



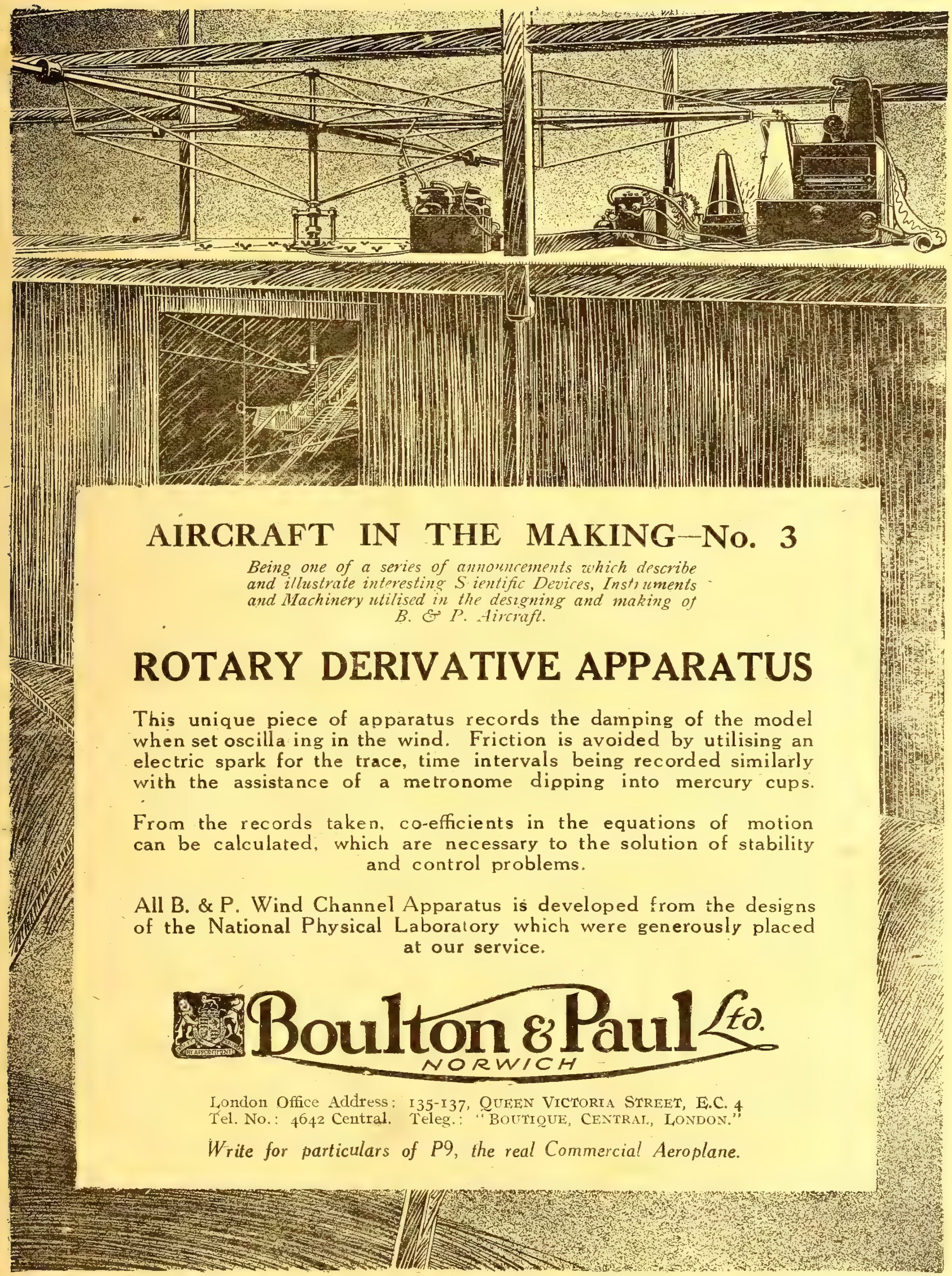


A Gotha Seaplane supplied to Turkey.

Even in 1914 the Warnemünde entry biplanes were supplied in series, and in spring, 1915, the Imperial Naval Office ordered five new Gotha types, viz., the W.D. (i.e., Wasser Doppeldecker=seaplane), 3, 5, 7, 8, and U.W.D. (Ursinus seaplane).

The chief designer of the firm was Diplom-Engineer Karl E. M. Rösner, and during the war 30 float-types were built, the first ones with sharp bows to the floats, then with extended stern to increase longitudinal stability and to prevent the fuselage from getting in contact with the sea, next the standardised streamlined type floats, and finally two-stepped floats for the heavy aircraft.

The original float-springing was soon dropped to the order of the naval authorities. The floats were always made with watertight compartments bulkheaded off and coated with varnish, or later with tar oil varnish on account of the shortage of boat varnish. When the three-ply wood grew of inferior quality towards the end of the war the floats



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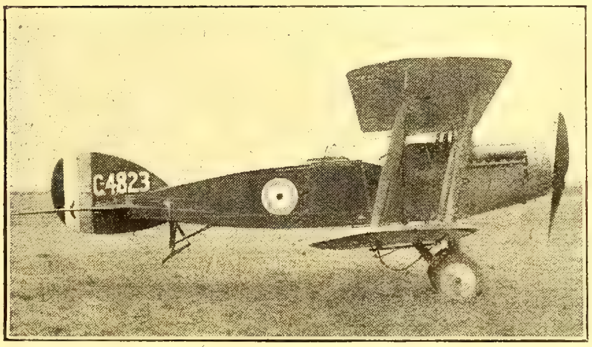

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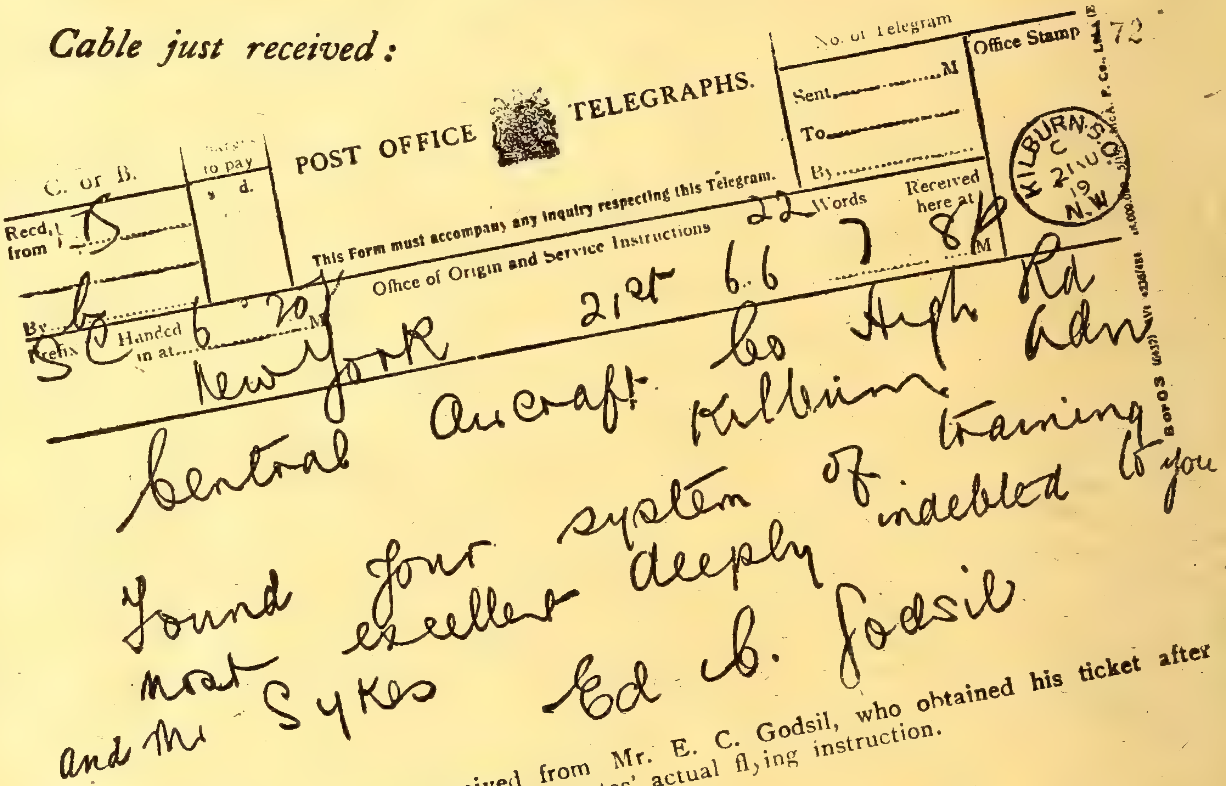

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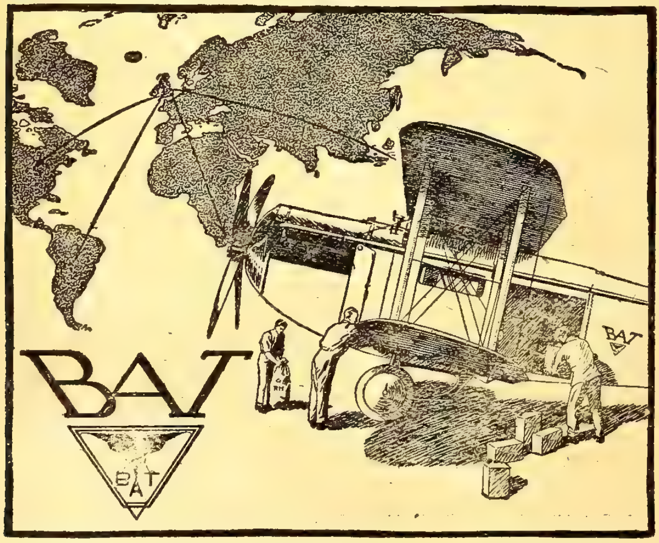

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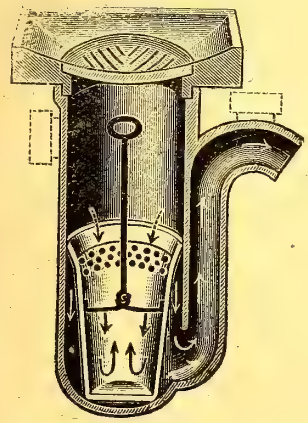

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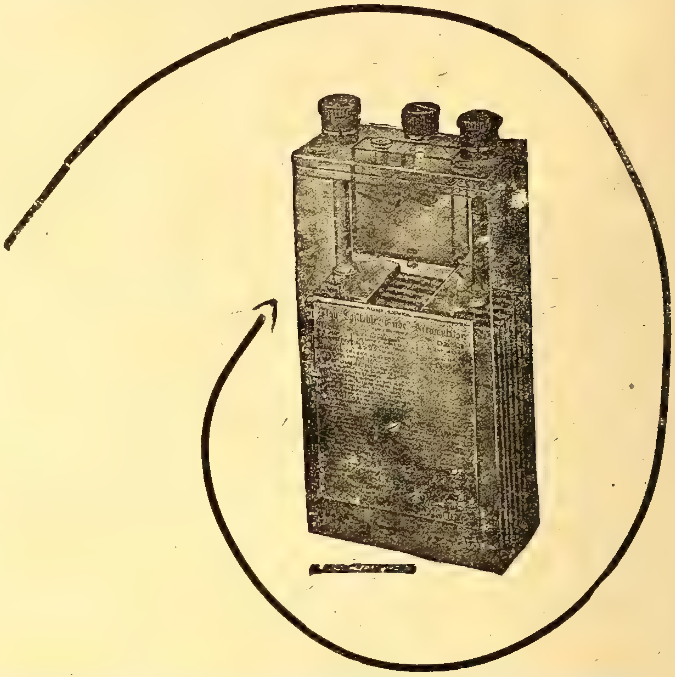

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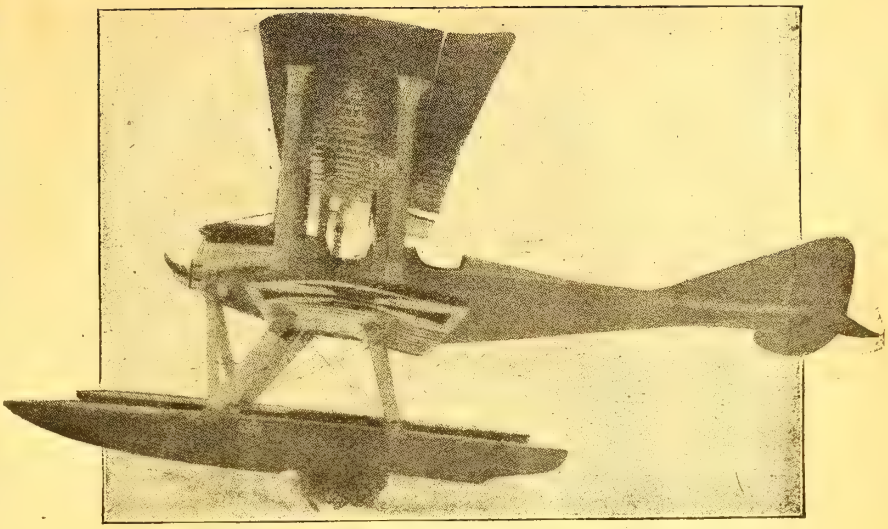
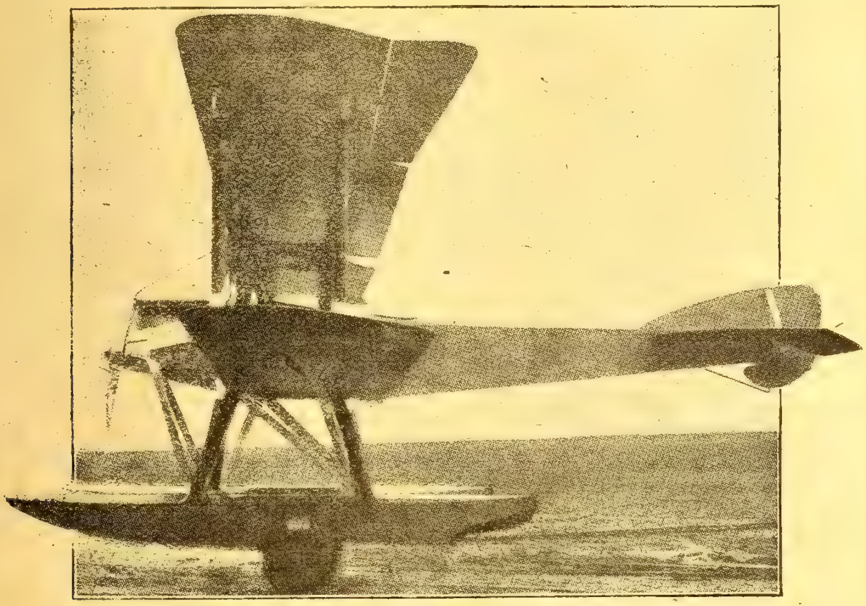
The Gotha Model 3 seaplane was of the twin-bodied pusher type, first heard of as an Ago type land-going scout or two-seater, the central nacelle, with a 160-h.p. Daimler motor installed, being of the Farman type, and the empty bodies replacing the triangular tail-tube construction of the ordinary pusher biplane, forming an improvement in head-resistance and in longitudinal stability. The front observer cockpit was provided with gun-mount, wireless plant and bomb-dropping device.

Model 5, with a 160-h.p. Daimler motor, was the first small speedy German tractor seaplane, from which the naval scout eventually developed and was the favourite of the commander of the Holtenau naval air station, Captain Lt. Langfeld, who kept it for his private use, even when appointed C.O. of the naval air station in Constantinople.

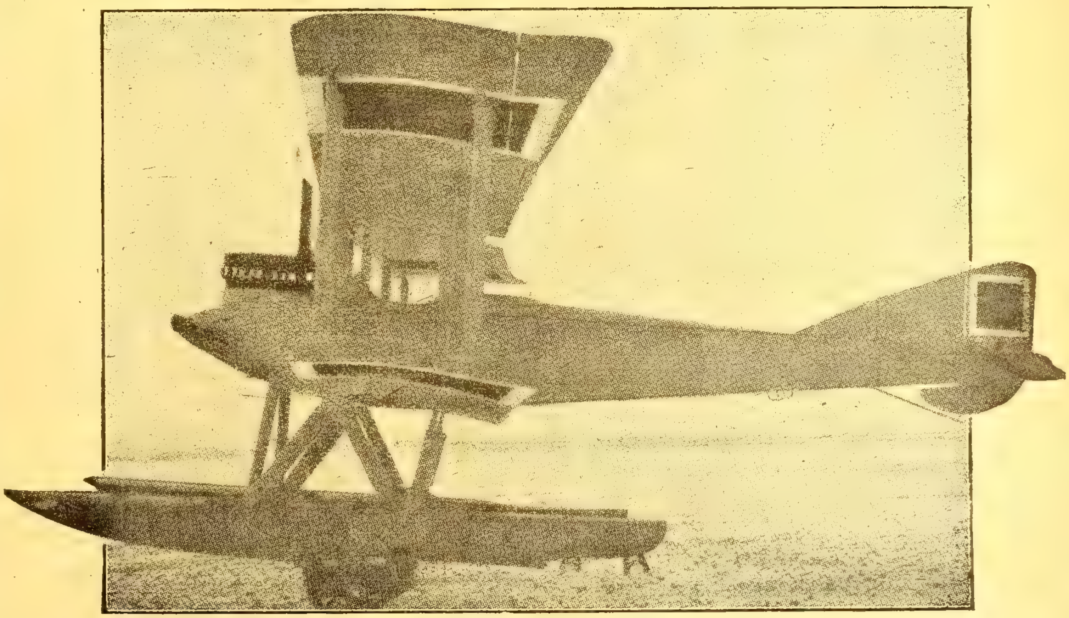


The Gotha W.D.12 Seaplane (160 h.p. Daimler engine).

Gotha type F. was the first twin-engined aircraft ordered by the German navy, being a two-float tractor seaplane, equipped with two 120-h.p. Mercédès motors, mounted on the lower planes above the floats. The observer and the gun mount were in the front cockpit, followed aft by the pilot, and the two tail fins and balanced rudders—beside the central fin—were arranged on each side of the undivided elevator.



The Gotha Model 15 Seaplane, equipped with a 260 h.p. Daimler engine.



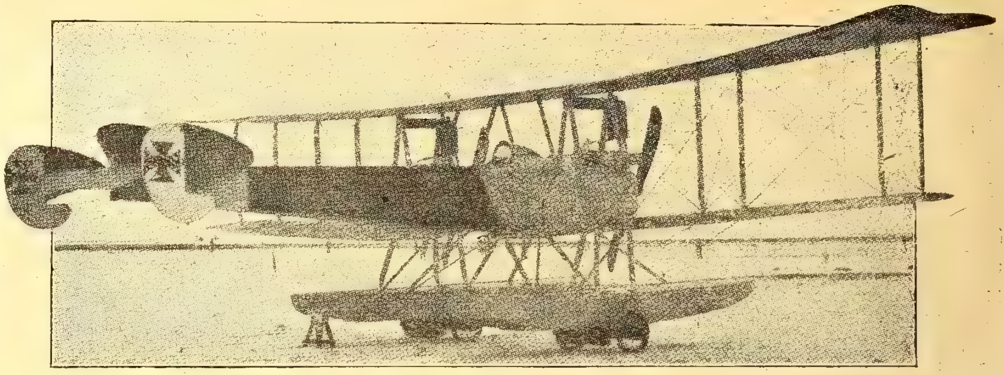
A Modern Gotha Seaplane, built for Turkey.

In the next model, No. 7, again a twin-engined seaplane, and the naval version of the Ursinus pattern, the two fins and non-balanced rudders were raised above the one-piece elevator. The W.D.7 was ultimately employed as school mount in the torpedo schools. The W.D.8 turned out with a single 240-h.p. Maybach engine installation and rear observer seat was the first high-powered German seaplane, the production of which was not entered into till two years later.

The Ursinus seaplane was equipped with floats of a length of 8.5 metres and was of the main dimensions: Length, 14.2 metres; span, 20 metres; area, 82 sq. metres; empty weight, 2 tons (1,940 kilos.); useful load, 350 kg.; extra load, 540 kg. The power plant was two opposite rotating 160-h.p Mercédès motors and the speed amounted to 158 kilometres per hour. According to the Ursinus patent the fuselage was raised to enable the centralising of the engines as far as having the screw-tips almost touch with the object of improving the control of large aircraft, and owing to the presence of the low floats the aircraft remained stable. The fuselage nose was made of three-ply wood and acted as observer cockpit with machine-gun mount and bomb-dropping device.

To facilitate railway transport the seaplane could be taken down in three parts, the central one with fuselage and motors remaining intact.

The type was nicknamed the Trojan Horse, dating from an acceptance flight in Warnemünde, when six passengers had been carried instead of sand ballast,



The Gotha Model F (two 120 h.p. Mercédès engines).

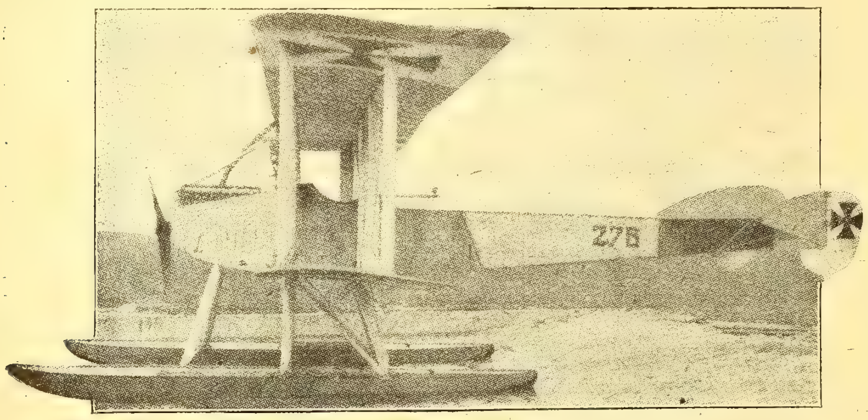
their sudden appearance on landing causing the above remark from the Government inspector, Marinebaumeister Baatz.

The Gotha works were next ordered by the Imperial Naval Office to remodel type 2 for a combined wheel and float under-carriage for Turkey, the seaplanes having to be transported by land, as Roumania had refused to sanction any transit. So a shaft with wheels on both sides of the floats were mounted below them, the latter acting as brakes by means of aft extending skids. Another feature was the rather old-fashioned top plane gun position calling for a standing position of the gunner-observer.

The seaplanes were sent by railway to Herkulesbad, in Hungaria, erected there and flown with spare parts across Roumania and Serbia to Lom-Polanka, in Bulgaria, from where they could again be transported to Constantinople. Further Gotha models of more modern streamline aspect supplied to Turkey are shown in illustration.

Model 12 was the next step in improving the German naval seaplane, cutting head-resistance with the aim of getting high-speed patrol machines. Equipped with a 160-h.p. Mercédès motor the attained speed was 141 kilometers per hour. The main dimensions were a length of 10 m., a height of 3.825 m., 15 m. span of top planes and 14 m. of lower ones, an area of 54 sq. m., a net weight of 1 ton without fuel or water, a useful load of 550 kilos., the total weight amounting thus to 15 tons. Fuel was carried for a flight of 5½ hours' duration, and the performance figures for climb were: 7.5 minutes to 1,000 metres; 1.500 m. in 12 min.; 2,000 m. in 19 min., and 3,000 m. in 41 min.

The Gotha model 15, with its 260-h.p. Mercédès engine, was the highest powered and the last single-engined type to be supplied to the German Navy. The results obtained with the large seaplanes encouraged the Imperial Naval Office to commence the building of torpedo-carrying seaplanes, the Gotha works turning out the models 11 and 14, the respective main figures being as follows:—



A Gotha Seaplane similar to the Model F, but with one 260 h.p. Mercédès engine.

Gotha W.D.11.—Overall length, 13.43 m.; overall height, 4.75 m.; span, 22.51 m.; total area, 103.4 sq. m.; motor plant, two 160-h.p. Mercédès; speed, 120 km.p.h.; climb, 1,000 m. in 12 min., 1,500 m. in 20 min.

Gotha W.D.14.—Overall length, 14.4 m.; overall height, 5 m.; span, 25 m.; total area, 131.7 sq. m.; motor plant, two 200-h.p. Benz, speed, 126 km.p.h.; climb, 1,000 m. in 17 min.; 1,500 m. in 38 min.

The net weights amounted to 2,146 kilos., and 3 tons, and useful load of 972 kg. and 1,183 kg., respectively, could be carried beside 465 kg. and 782 kg. fuel.

The W.D.14 was the later model, showing an increase in dimensions and being provided with tractor screw-drive instead of pusher as in the former, the beam of the fuselage being further increased to enable a side-by-side seating arrangement of pilot and observer, who could take turns at pilotage, the control lever being shiftable. W.D.11 had the usual tandem seating with observer in the fuselage nose in front of the planes. The W.D. 14 model was further provided with a folding arrangement, when the span was lowered to 8.7 metres, the length increasing then to 15.1 metres. The torpedo was carried below the body and a special dropping gear was provided. In an attack the seaplanes would come down to a height of 20 to 30 ft. and launch the torpedo on the object.

The same seaplanes were used also for mine-laying both on the French and English coasts and against the Russian naval forces, being employed further during the raid in Krisland for the occupation of the island of Oesel for the transport of troops, landing machine-gun detachments, who conquered the surrounding small islands. For mine-laying, the torpedo gear was replaced by mine racks, or again by special petrol tanks to be dropped in case of long-distance patrol flights of 11 to 12 hours' duration in the North Sea.

Finally, a special version of the land-going Gotha model was turned out for long naval patroling, the dimensions were identical with those of W.D.14, but the performance was improved by the employment of two 230-h.p. Benz motors, a climb to 1,000 metres being thus attained in 15 minutes, while it took 25 minutes to reach 1,500 metres. The total weight of the twin-engined seaplane amounted to over 4.5 tons (4,540 kilos.) and comprised a net weight of 3 tons (3,030 kilos.), 1 ton fuel (1,024 kilos.), and 0.5-ton useful load (486 kilos.).

* * *

TRIPLEX GLASS AT OLYMPIA MOTOR SHOW.

As Triplex Glass became almost universal on Service aeroplanes and motor vehicles so it is becoming on all private motor vehicles, and at the 1919 Motor Show the following well-known motor manufacturers will have Triplex Safety Glass windscreens as a standard fitting in their cars:—Straker-Squire, Singer, Star, Lanchester, Hillman, Mercury, etc., etc. Morris Russell and Co. will be showing a special Triplex windscreen for Ford cars, and the Auster-Triplex and the Beatonson Triplex Backscreens will be on view on Auster's and G. Beaton and Son's stands respectively.

It is interesting to note that several insurance companies are allowing rebates approximating to 22½ per cent. on premiums when cars are fitted with Triplex windscreens, etc.

NEW AIR TRANSPORT COMPANY.

As a result of the meeting of 50 business men at the Athletic Club in Los Angeles, Cal., the incorporation of a company known as the California, Great Western and Inter-State Air Route has been announced. The company has been incorporated at $1,000,000, and intends to develop commercial aviation in the Western States of America.

According to the report, the company will establish and operate landing stations and use various types of aircraft. It will make every effort to stabilise the Air Industry. Plans have been made for standardised landing stations at Los Angeles, San Francisco, Oakland, Sacramento, and other places. It is said that the cost of the offices and hangars to be erected on each landing ground will be from two to three million dollars.

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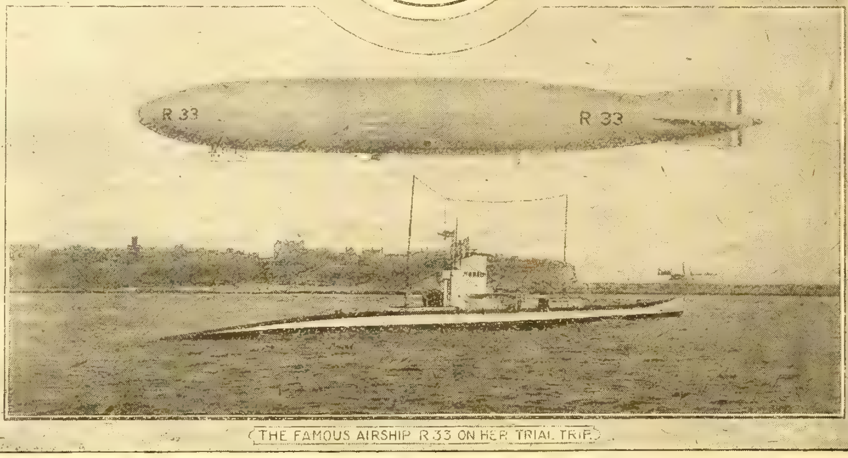

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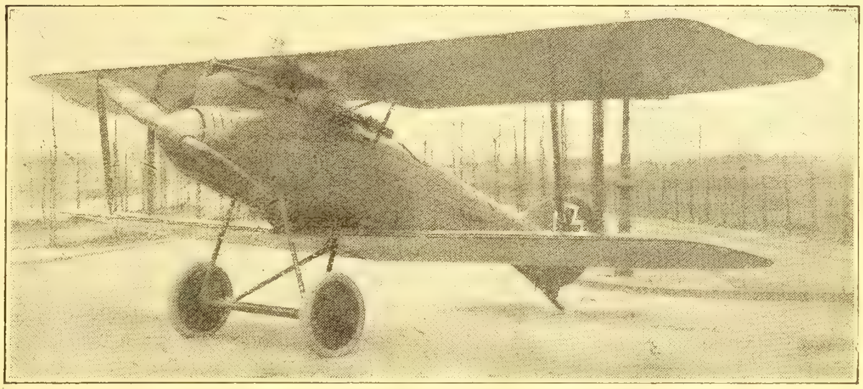
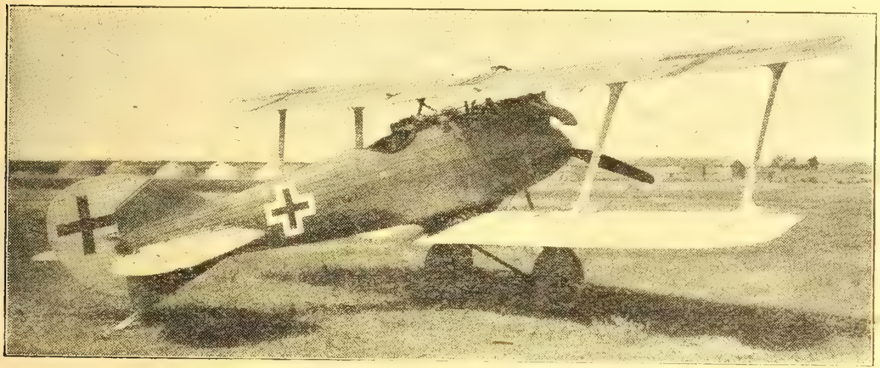

The Roland D VIa of 1918 (160 h.p. Mercédès).

The Luft Fahrzeug Gesellschaft (L.F.G.), of Adlershof, the manufacturers of the well-known "Roland" aircraft, must be reckoned amongst the pioneers of aviation. They are the direct descendants of the original German Wright Company. Roland machines played an active part in the late war, and the photographs attached of certain machines of this make, most of which are of recent date, and which have not previously been illustrated in this country, are of considerable interest.

THE D.VIA FIGHTER.

The first picture represents a type D.VIa single-seat fighter, fitted with a Mercédès 160 h.p. engine, built in 1918. A noticeable feature is the extremely well-shaped fuselage which the photograph reveals as constructed of longitudinal planks—a real boat-built body, in fact. The cowling of the engine is also remarkably neat. The radiator is carried in the top centre section.


The Roland D.VIb (160 h.p. Mercédès)

The undercarriage appears to be remarkably slender in its members—suggesting the use of circular section tubes unstreamlined. This feature recurs almost throughout the series.

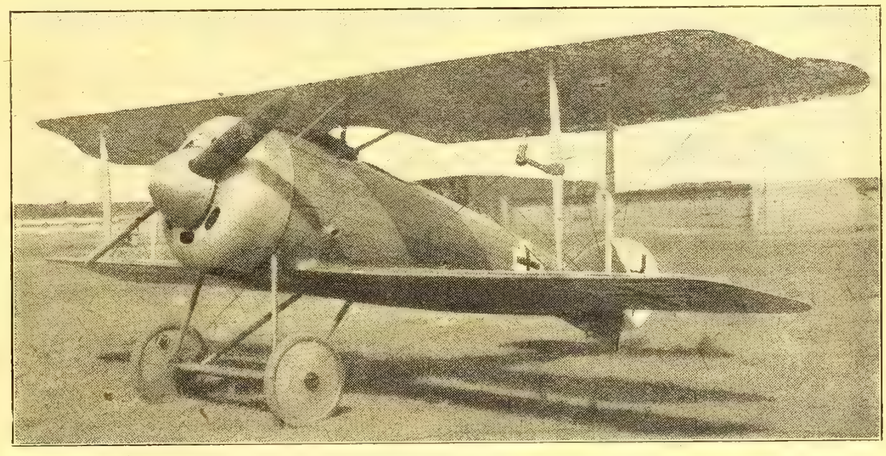
AND A MODIFIED VERSION.

The second picture represents a D.VIb of somewhat later date, apparently employing the same fuselage and tail unit, but with a different wing structure. There are now two single I struts on each side of the fuselage, each strut supporting both spars, in place of the normal single row of two struts, one on the front and one on the rear spar.

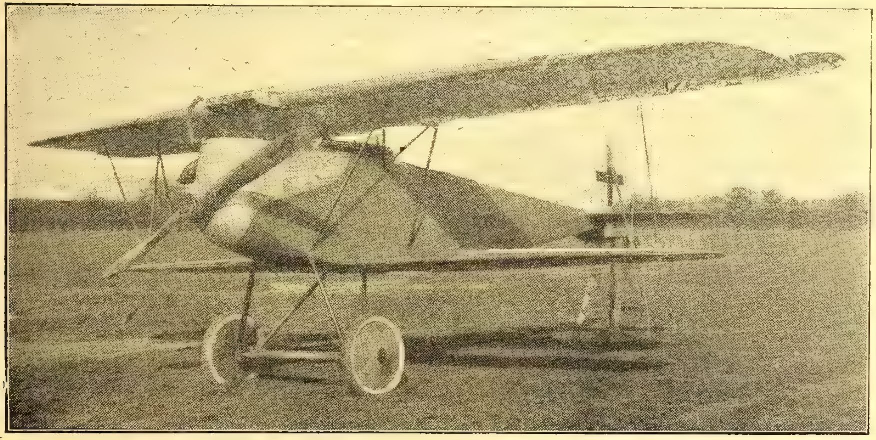
The picture of this machine shows the characteristic German habit of using a vertical fin both above and below the fuselage. The neat way in which the lower fin acts as a fairing for the tail skid support is noteworthy.

A ROTARY-ENGINED EDITION.

The third picture—D.XIV type, appears to be a D.VIa type adapted to a rotary engine—probably the 11-cylinder Siemens engine, recently described in this paper. The fuselage appears to be of the boat-built type, of increased diameter forward to accommodate the engine, but in other respects the machine closely resembles the D.VIa.


The Roland Type D.XIV with Rotary engine.

The engine cowling in this machine seems to be designed on a very optimistic estimate of the self-cooling properties of a rotary engine—and it is very difficult to believe that the engine can have kept cool within it.


The D.XV Roland of the Fokker influenced Wireless Type.

D.XV.—A WIRELESS TYPE.

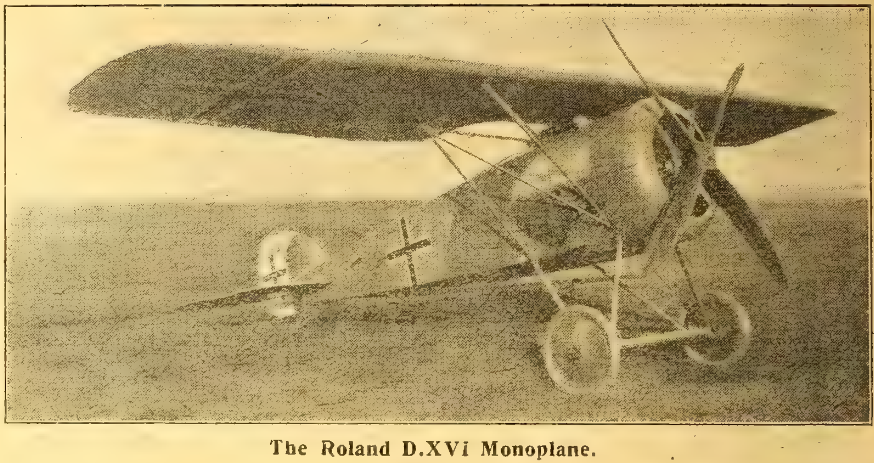
In the fourth picture there is a marked change. The machine represented is the type D.XV, a biplane of the cantilever wing type, now so popular in Germany.

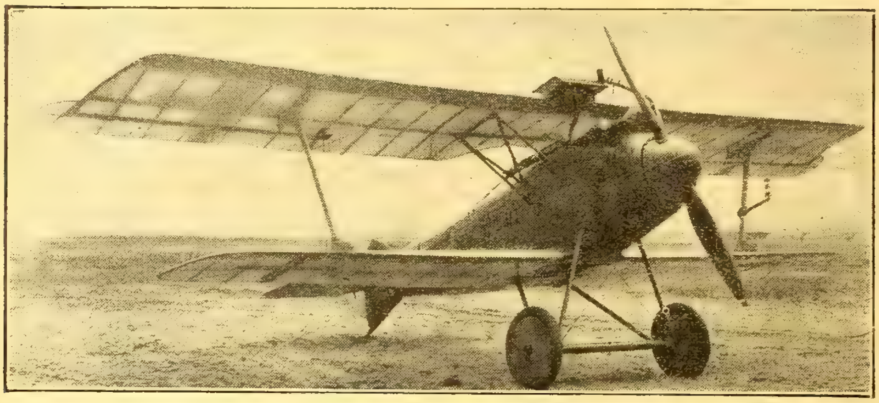
The upper wing has the characteristic great thickness in the centre section tapering to the tips which are common to this type of machine, and there are no lift or landing wires. The boat-built fuselage has disappeared in favour of a slab-sided structure tapering to a horizontal knife-edge aft, and the shape of the rudder and fin is quite different from that of the previous examples. It seems probably the effort of a different designer.

It seems very possible that most of the machines of this general type—manufactured by all sorts of firms and known by the name of the manufacturing firm—were, in fact, essentially of the same design, subject to minor modifications of detail to suit the builders' manufacturing facilities.

A Monoplane.

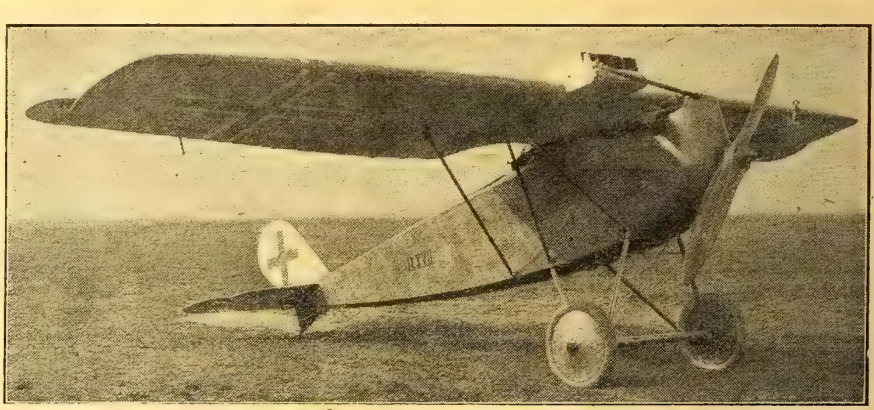
The next picture—that of a type D.XVI monoplane—is again a cantilever wing machine, fitted with a rotary engine, and bearing a strong resemblance to the Fokker monoplanes of the same class.


The Roland D.XVI Monoplane.


A Roland "Wireless" Machine.

A Reversion to Type.

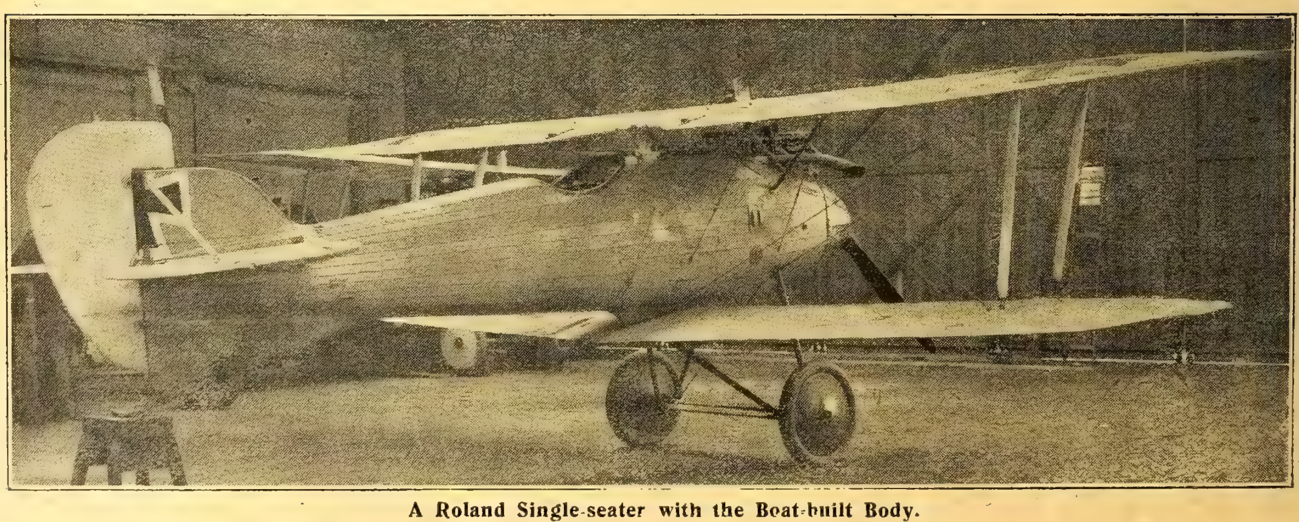
The sixth picture shows the return of some of the characteristics of the earlier pictures. The fuselage of the D.VIa type is here fitted with cantilever type wings, which are fitted with I interplane struts in place of the rather untidy N form struts, which usually characterise the cantilever wing type of German biplane. Apparently, the wings of this machine are covered with some form of transparent material, and the internal structure of the wing is visible. It should be noted that the front spar and the leading edge are joined together by some opaque material, and it may be assumed that the two are really formed into a single wide spar. Apparently, this spar arrangement has forbidden the neat stowage of the radiator into the centre section, as in the D.VIa, with the somewhat clumsy effect shown.


The Roland D XVII with vertical engine.

In this case it would appear that the Roland designer has had a free hand to build a cantilever wing biplane to his own designs. Whatever may have been the result—as far as performance goes—the product is distinctly more pleasing to the eye than the great majority of this Fokker-influenced type.

The Type D.XVII.

The type D.XVII, shown in the next picture, is an obvious modification of the D.XVI type above, fitted with a vertical six-cylinder engine, instead of a rotary one. In this case the ailerons are balanced, whereas those of the D.XVI appear not to be, and the ar-


A Roland Single-seater with the Boat-built Body.

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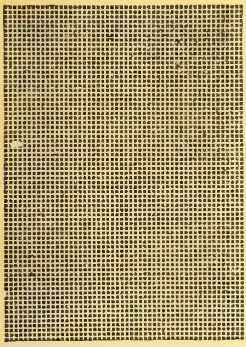

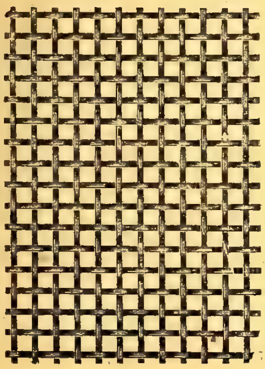

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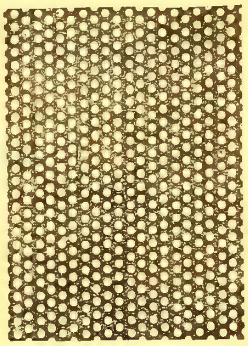


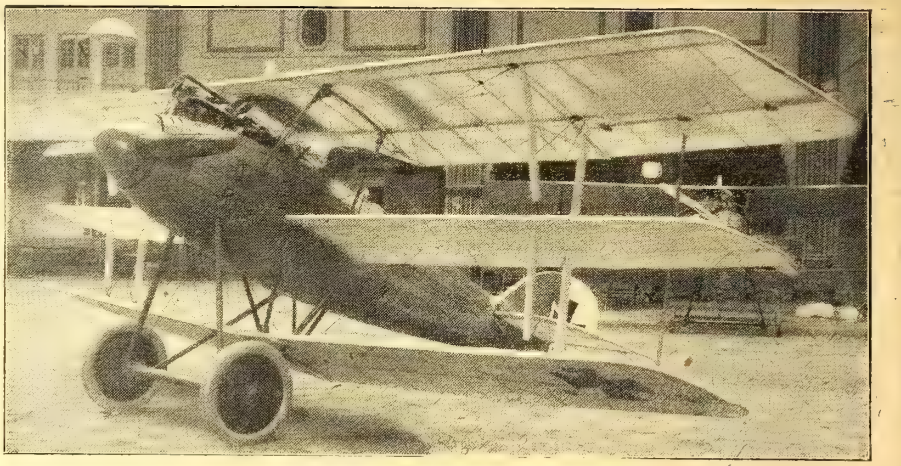
rangement of the wing strutting has been slightly simplified.

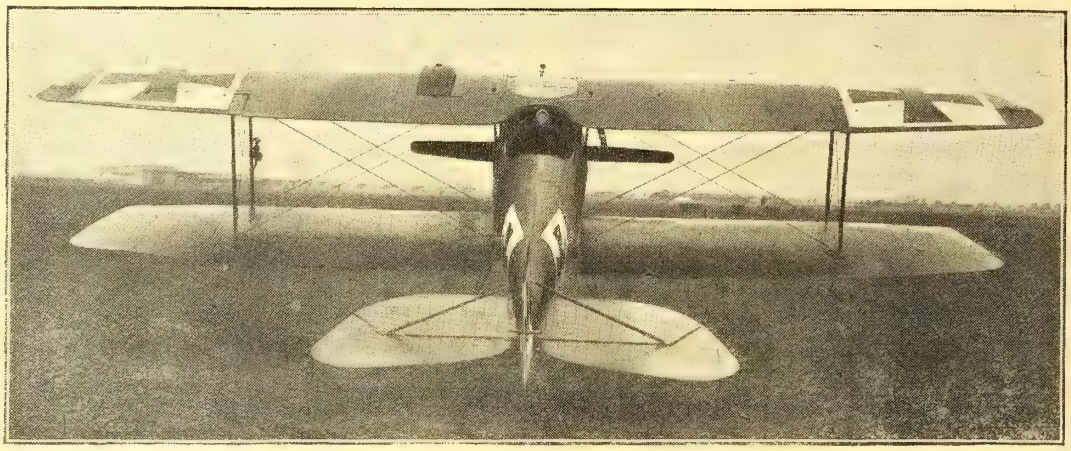
Here the Roland designer has not altogether escaped to his own devices, but apparently has been allowed to exercise some portion of the cleaning up capacity which he obviously possesses.

ANOTHER VERSION OF THE D.VIA.

The machine at the foot of page 1686 would appear to be a slightly modified D.VIa. The engine cowling is slightly changed, and it is obvious that a new rudder has been fitted on the example shown.

This picture shows very clearly the planking of the boat-built body. As in the D.VIa the engine is a Mercédès of 160 h.p. The photograph also shows that this machine has a lower wing of slightly less chord than the upper—which appears to be the case in the D.VIa and D VIb.


A Roland Triplane of Clean Design.


A Bayern-engined Edition of the Roland D.VIa Type.

This picture also shows the way in which the lower wings are carried from a kind of keel built out from the bodywork, and to which the rear chassis members are also attached.

A ROLAND TRIPLANE.

The triplane next shown is probably of slightly later date than the D.VIa and b biplanes, and uses again the boat-built body, and a six-cylinder vertical engine It will be noticed that the top wing is considerably greater in chord than are either of the lower ones, and that ailerons are fitted to all three wings. The bottom ailerons alone have the appearance of being balanced, but this is probably an illusion.

It would seem fairly safe to assume that this was one of the many German machines resulting from the effect of the Sopwith triplane, and that its inception dates back to some time in 1917, and its appearance to the first half of 1918.

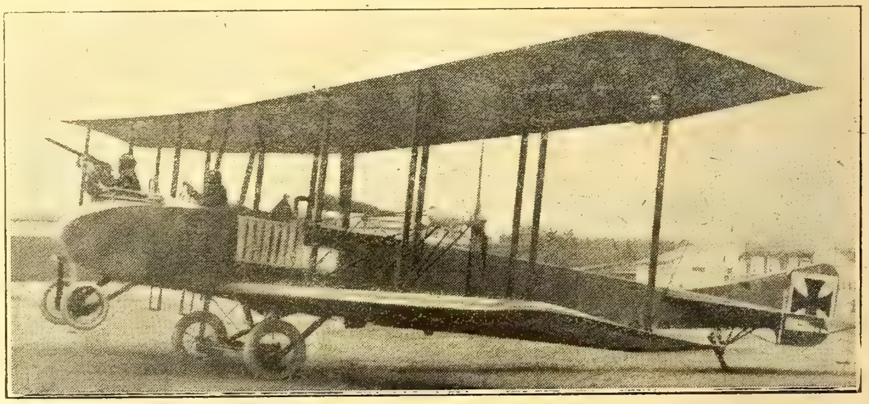
A BAYERN-ENGINED MACHINE.

The tenth picture, again, appears to represent a machine very similar to the D.VIa—but, in this case, a three-ply body is used, and the engine fitted is a B.M.W. (Bayern) of 185 h.p

The position of the radiator, let into the upper centre section, is clearly shown in this view.

A TWIN-SCREW MACHINE.

The last picture represents a twin-propeller machine with the power plant in the fuselage, apparently driving the two airscrews by chain. This is, in all probability, a machine of early date.


A Twin-propeller Roland Machine.

Neglecting the last machine, the Rolands illustrated show a characteristic type of machine of extremely neat and graceful design, which has persisted in spite of the irruption into the series of a number of much less handsome types.

It looks very much as though German aircraft designers had suffered at the hands of their indigenous Technical authorities in very much the same way as their British *confrères*.

PHŒNIX PRODUCTS.

A very interesting brochure has been issued by the English Electric Co., Ltd., which gives the war history of the firm, its post-war programme, and, at the same time, in a foreword endeavours to show that aircraft transport compares favourably with other forms of locomotive transport, particularly in connection with the running of flying-boat services in undeveloped countries.

The English Electric Co., Ltd., which is the result of the fusion of the Coventry Ordnance Works, Dick, Kerr and Co., Ltd., and the Phœnix Dynamo Co., Ltd., into one concern, have been engaged on aircraft construction throughout the war, and in 1917 they started on flying-boat construction, building large numbers of F.3 boats, as well as a very successful craft of their own design known as the Phœnix "Cork," which surpassed the specified Air Board performance, and proved to be ahead of the then official design.

As a result of their experience gained in flying-boat construction during the war they are specialising in the flying-boat for their post-war programme.

Four types of boat are projected, ranging from the "Grey Mullet" boat, of 275 h.p., to the Phœnix "Pulex," of 4,800 h.p., which will be capable of carrying 50 passengers, or 6½ tons of goods.

The other two boats (the Phœnix "Cork," of 750 h.p., and the Phœnix "Eclectic," of 3,600 h.p.) were both designed for service purposes, and they are being altered for commercial work.

The booklet is well illustrated, and contains descriptions of all these craft, together with line drawings, as well as a collection of views of some of their war products, etc.

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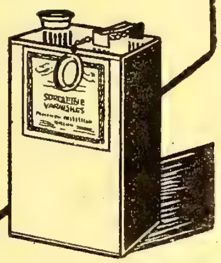

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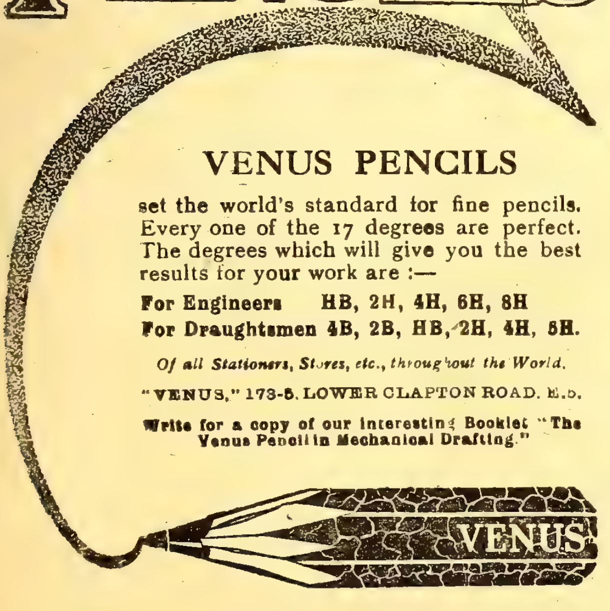

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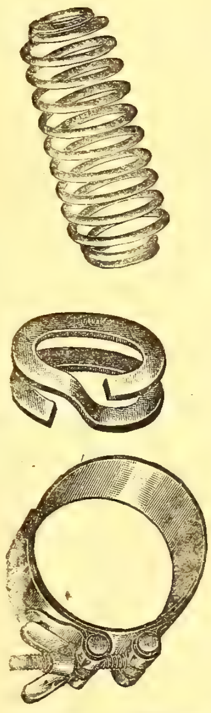

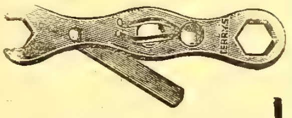

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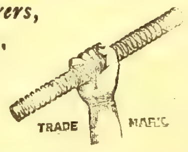

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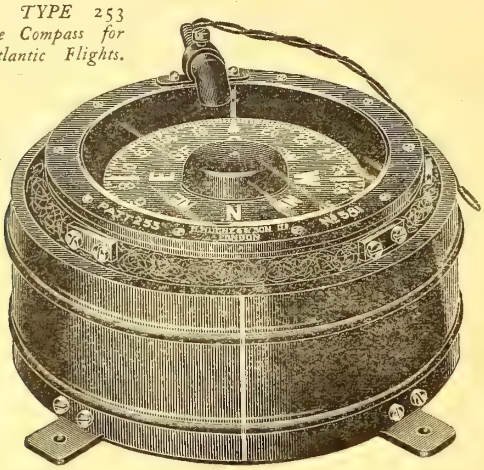

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(*Continued from page* 1658.)

During the past week, ending Nov. 8th, the weather was officially reported "Totally unfit for flying" on every day except on Nov. 5th, when it was "Unfit for flying." Despite the mist, fog, snow, hail, rain and very strong winds which carried on, especially over the Channel, during the whole week, machines were able to fly from England to France, as will be seen in the table below, although it was not always possible to land at the destination aerodrome.

An air service to Holland is in preparation, and an aerodrome has been obtained near The Hague.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Nov 3rd	D.H. 4a	Lt. Armstrong	12.35 p m.	Stopped at L'mpne			0
Nov 4th	D H. 4a	Lt. Armstrong	Lympne, 10.25 a.m.	12.34 p.m.			0
	D H. 9	Capt. Baylis			12 30 p m.	psom, 4.16 p.m.	0
Nov. 5th	D.H 4a	Lt. Lindley	12 35 p.m.	2 30 p m.			0
	D.H. 9	Lt. Powell			12 30 p.m.	2 40 p m.	2
Nov. 6th	D.H. 16	Lt. Tebbit	12.30 p.m.	Stopped at L'mpne			3
Nov. 7th	D.H. 16	Lt. Tebbit	Lympne, 11.15 a.m.	Stopped at L'mpne			0

THE HANDLEY PAGE SERVICE.

On Nov. 1st a Handley Page aeroplane carried twelve passengers, 500 lb. of freight, and nearly 400 lb. of personal luggage to Paris through driving rain. Lieut.-Col. Robert Loraine, the aviator actor, was one of the passengers.

On Nov. 3rd a Breguet machine, working in conjunction with the Handley Page Transport, Ltd., flew from London to Paris in 4 hr. 5 min. with one passenger, through wind, hail, and rain. This was the only machine in the Continental Air Services to accomplish the journey.

According to the newspapers, fourteen passengers and 610 lb. of goods were carried on Nov. 5th on the Handley Page London, Paris and Brussels services. The journey from London to Paris took about 2½ hours, and another machine left Brussels at 11.25 a.m. and reached Hounslow at 3 p.m.

During the week ending Nov. 5th thirty-nine passengers and 2,588½ lb. of freight were carried on the London-Paris service, and seventeen passengers and 558½ lb. of freight on the London-Brussels service. Ladies' wearing apparel is being conveyed from London to Brussels for sale in the large stores of that city.

THE B.A.T. SERVICE.

The Amsterdam service is still in operation, but last week, owing to weather conditions, no machine left this country for Holland.

BROOKLANDS.

A correspondent writes :—

The bad weather has prevented Brooklands pilots from doing much flying during the past week, but some test flights have been made on Vickers "Vimy" and Sopwith machines. The repairing of the motor-track still continues, although it will be some months before cars will be permitted to do anything in the nature of racing thereon.

The Anglo-American Oil Co. have now completed negotiations for the acquisition of Gordon Watney and Co.'s works, which they will equip as a repair depot for their fleet of motors.

Lang Propeller, Ltd., are still manufacturing airscrews and experimenting, although their side lines are furniture and boats.

The Weybridge works of Vickers, Ltd., are now turning out the "Vimy" commercial machines for China, of which a hundred have been ordered. Some experimental work is also being done.

An error was made in the notes published under this heading in the issue of Oct. 22nd, when it was erroneously stated that the film biplane which Martinsyde, Ltd., are constructing was tested on the sea. This machine has not yet left the shops, and alterations are being made to the fuselage.

Martinsyde, Ltd., have lately acquired the sole rights of manufacture, etc., of the "Ivy" motor-cycle, which they will improve and turn out under another name. It was hoped that the machine would be exhibited at the Motor Show.

The Australian Martinsyde "A. S." machine is again ready for more test flights, and is expected to give complete satisfaction as a result of detail alterations to the fuselage, etc. According to rumours, a new Martinsyde racing biplane of small dimensions is to be constructed in the near future, but nothing definite is known at present.

The Walton Motor Car Co., proprietors of the A.B.C. aero engine, are exhibiting at Olympia, and are engaged in all kinds of experimental work on motors, motor-cycles, and aero engines.

The Air Navigation and Engineering Co. (Blériot's), of Addlestone, are manufacturing another type of light car besides the "Whippet." This car is known as the "Marlborough." The firm have entirely discontinued their aircraft work for the present.—J. F. S.

LEATHERHEAD.

Mr. W. G. Chapman, the manager of the Leatherhead Motor Works, has bought a D.H.6 biplane with a 90-h.p. Curtiss engine for his own use. After ten and a half hours in the air he is very satisfied with the machine.

A four days' journey was made during the week-end *circa* Oct. 26th, in all some 340 miles, with two hours' flying in a 30-m.p.h. gale. With a pilot he started from Leatherhead for Aldwincle in Northamptonshire and landed in a small field at Leighton Buzzard to ask his way. The next landing was made at Oakham (Rutland), where they stayed the night.

On the next day they flew via Kettering to Aldwincle. It was blowing very hard and very cloudy when they left the latter place. After flying south for one hour and a half King's Lynn in Norfolk was reached. A landing was made at Cambridge thirty-four minutes later, where the night was spent. The following morning they returned to Leatherhead via Chingford and Hendon.

Ten landings were made on the journey. It was not necessary to make any adjustments either to the engine or the machine.

Several flights have been made at Brooklands, where the machine is kept pending the arrival of a hangar at Leatherhead. There is difficulty in finding a suitable landing ground at the latter place. Mr. Chapman has had several inquiries for flights and wishes to take up passengers for short trips, as he hopes to be able to fly the machine himself very shortly.

LONDON.

HENDON.—On Thursday, Nov. 6th, Major Draper gave special flights at Hendon on the B.A.T. saloon passenger machine in the presence of visitors from Australia and Spain. Passengers were taken up, including some of the visitors.

AUSTRALIA.

Mr. Sidney Pickles, at the request of the New South Wales Government, is to survey the route between Sydney and Broken Hill for the purpose of establishing an aerial passenger service between those places.

Mr. Sidney Pickles has flown from Sydney to Broken Hill, a distance of 624 miles, in 11½ hours actual flying time.

BELGIUM.

AERONAUTICAL REGULATIONS.

The Belgian Government has now laid down regulations for the control of aeronautics within the frontiers of the country. The importation and exportation of merchandise by air is subject to the same conditions as control the movement of goods by land. Infractions of this order and others controlling aeronautics can be punished by imprisonment for from eight days to one year, or by a fine of from 50 to 5,000 francs. In addition the certificates of the crew of an airship or aeroplane contravening these regulations may be suspended for any period between three months and three years.

Airships and aeroplanes trading in Belgium should be registered in that country and so take on Belgian nationality.

THE ANTWERP AVIATION MEETING, 1920.

In 1920 Antwerp will be for a space en fête. Organised gaiety will regulate the city and its visitors in celebration of the past hidden from the present by the mists of war. All sports will be practised, and among them aeronautics will hold an honoured place. The fevered brow of the intrepid aviator will find solace in the clouds while his gyrations will serve to amuse and instruct the innocent and the guilty alike.

CHILE.

Commander V. Guichard, chief of the French Aeronautical Mission, has arrived at Santiago to form a company to start an aerial service between Santiago and Valparaiso.

DENMARK.

The Danish correspondent of THE AEROPLANE writes :—

THE DANISH AIR TRAFFIC CO.

The two 110-h.p. Le Rhône-engined Avros of the Danish Air Traffic Co. (in preparation) have now made their first public flights by Copenhagen, piloted by Capts. Atkinson and Faber (late R.A.F.). Much delay was caused by the dock strike. The biplanes were erected at the Avedore artillery aerodrome by Copenhagen, where shed accommodation has been hired for four aircraft. The German aeroplanes, managed by Danish and Sleswig military pilots, are stationed at the other suburb aerodrome at Lundtofte.—E. H.

A CURTISS FLIGHT.

The Naval American pilot, Captain Batts, flew on Nov. 6th from Gothenburg to Copenhagen on the new large Curtiss flying-boat of the Danish-American ice manufacturing millionaire, Mr. Larsen, having carried out exhibition flights in Norway during the summer. The machine started the day before for the Danish capital, and made an intermediate landing at Gothenburg, but ran short of petrol between Kullen Rocks and Helsinore. It was towed safely to Copenhagen by a sailing vessel in spite of the rough sea.

AERIAL FLOWER TRANSPORT.

The Bréguet flower flight from Paris to Copenhagen was not carried out on Nov. 6th as destined, as the firm could not get landing permit at the Copenhagen aerodrome from the War Office, nor permission in Sweden; as, however, all the Nizza flowers had been sold in advance in Denmark, Norway and Sweden, the receiving firm will apply again.—HI.

FRANCE.

THE PARIS-MELBOURNE FLIGHT.

M. Poulet, with his mechanic M. Benoist, landed at San Stefano aerodrome, Constantinople, on Oct. 28th. On the following day he left for Konia at 6.30 a.m. and reached that place after a stormy voyage about 4.30 p.m. On Nov 4th he reached Adana, on Nov. 7th Baghdad, and Nov. 8th Bushire.

He left Bandar Abbas at 5.0 a.m. on Nov. 9th for Karachi, *via* Tscharbar (on the Persian Gulf), which town he passed over at 11 a.m.

A NEW PRIX MICHELIN.

M. Michelin, who has given generous assistance in the past both to motoring and to aviation, has now written to the Aero Club de France offering a prize of 500,000 francs (normally £20,000) for the aviator or designer of the first aeroplane (1) to rise vertically from the ground, (2) to possess the greatest possible range of speed up to 124 miles an hour, and (3) to land vertically within a radius of five metres.

The demands are high, but one does not doubt that aeronautical genius will solve the apparently insoluble problems.

THE GORDON-BENNETT CUP.

The Gordon-Bennett Aviation Cup will be competed for in 1920 after a gap of six years. The regulations are now being considered by the Aero Club de France. Rumour states that it will be decided in a cross-country race on this occasion.

A TRANS-MEDITERRANEAN COMPETITION.

A French correspondent writes :—

Towards the end of the year there will be a competition for a seaplane "Traversée du Mediterranée," starting from Saint Raphael for Tunis or Tangiers—a speed and endurance contest. Details are not yet issued.

LIEUTENANT DE ROMANET.

Lieutenant de Romanet, who is now in Madrid, where he delivered a Breguet to the Spanish Government, is representing several French firms in Spain. He is entering for the Mediterranean Race on a Nieuport with a Ratteau Turbine and a "de Mange-Desmons" variable propeller. A Breguet Ratteau machine will probably also be in the race.

A SALON SOUVENIR.

"L'Air" is producing the official "souvenir" for the Paris Aero Show. There will be no displayed advertisements, but letterpress and photo descriptions of everything exhibited. Arrangements for such descriptive matter should be made through "The Express Publicity Co.," 36, New Broad Street, E.C.2, who are the advertising representatives of "L'Air" for Great Britain.—J. S.

GERMANY.

THE MISHAP OF THE "BODENSEE."

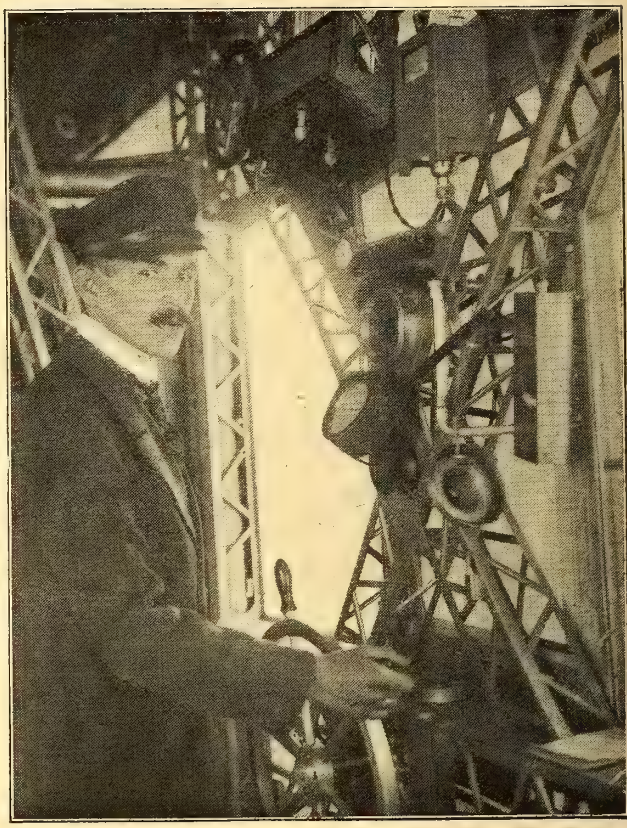
Mrs. Charles Tower, the wife of the Berlin correspondent of "The Daily Mail," was a passenger in the "Bodensee," which narrowly escaped being wrecked near Berlin on Nov. 2nd, as noted in last week's issue of THE AEROPLANE.

Mrs. Tower was the only Englishwoman aboard the airship, though there were five women passengers altogether, of whom one was an American. It was said that had there been fewer passengers on board when the "Bodensee" left Friedrichshafen more petrol could have been carried.

The account of the mishap given by Mrs. Tower is as follows :—

"When the 'Bodensee' crashed on the landing-ground at Staaken, 13 miles from Berlin, the engines were disabled. After repeated bumping the airship suddenly rose. There was a moment of extreme peril as we just cleared a shed. Had we fouled it the 'Bodensee' would have been lost.

"We rose steadily to what seemed an immense height. We were in darkness, with snow falling, and it was terribly cold, all the windows being smashed



The navigator of the Hamburg-Amerika Air Liner "Bodensee." (Zeppelin airship.)

"Captain Felming, who behaved splendidly throughout, came to the passengers and explained that the motors were damaged, and enjoined courage, declaring that if everyone kept quiet he would save the ship.

"In two hours, by the extraordinary courage of war-trained mechanics, the engines were repaired. We had so little petrol that only one motor could be used at a time. The captain's compass was damaged by the shock, but after drifting for hours he brought the ship over Staaken again, intending to keep her there till he could land her safely at dawn.

"At midnight, realising that this was impracticable, he decided to drift to a fir wood, where he thought it safe to come down. In three hours he found in the darkness a suitable landing place between Magdeburg and Stendal (60 miles from Staaken. We were then told that if no panic occurred and everyone obeyed orders the ship would come down safely.

"We descended very slowly, Capt. Felming allowing some gas to escape. Finally, between three and four, in complete darkness, we came down on the tops of fir trees which were densely covered with snow. These were fortunately dwarf trees and the ship cushioned on to them and was secured.

"In the early dawn we were removed, huddled into haycarts by rescuers through the deep snow, to a little village, where we got food and warmth."

The Danish correspondent of THE AEROPLANE writes :—

THE FOKKER PLANT.

"Flugsport" announces that Unie Bank voor Neederland en Koloniën, being one of the founders of Minjheer Fokker's Dutch "Nederlandsche Vliegtuigfabrieken" aircraft works, has bought the Fokker plant in Schwerin.

THE SYNCHRONISED GEAR PATENT.

The Imperial German Court on Oct. 15th decided in the claim of priority of Fokker, *re* firing through the screw in a fighting aircraft, that the synchronised gear was the invention of the L.V.G. Co., patented by it before the war by its former technical director, the well-known Swiss aeroplane designer Franz Schneider.

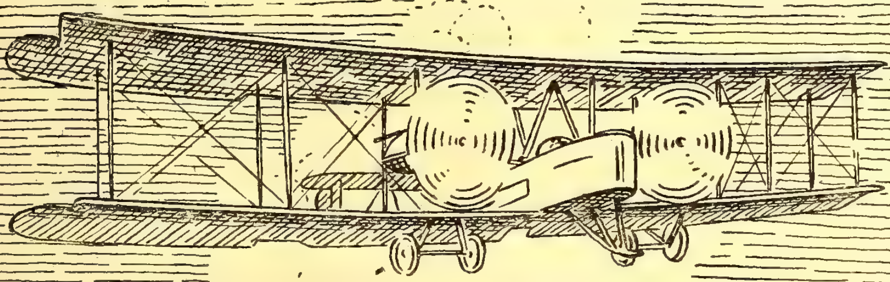
THE YOUNG IDEA.

From the advertisement pages of the journal it is interesting to note the request for patrons from youngsters, keen on flying but poor. One derives from the many "situations wanted" of war-pilots that, when offering their willingness in most cases of going abroad, Japan is stated as the favourite place.

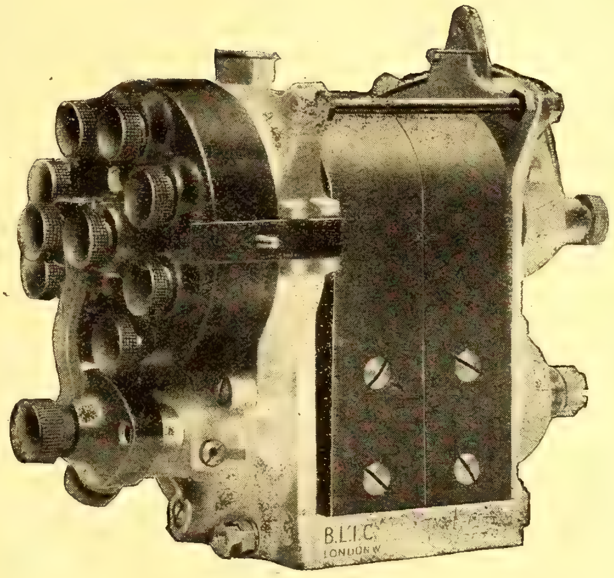
THREE NEW COMPANIES.

None of the three last-named new-formed air traffic concerns appear to be of special import either from the

B·L·I·C



ASSOCIATION OF BRITISH MOTOR AND ALLIED MANUFACTURERS



THE BRITISH
LIGHTING AND IGNITION
CO. LTD.

CHESTON ROAD,
ASTON, BIRMINGHAM
(Proprietors :
Vickers, Limited.)

CYCLE & MOTOR - CYCLE SHOW, OLYMPIA.

Nov. 24th to 29th.

You are cordially invited to call and inspect the exhibit of these famous British-built Magnetos on

STAND No. 228.

size of capital or the name of founders, being the Badische Luftverkehrs-Ges.m.b.H. in Baden-Baden, of a joint stock of 100,000 marks (£5,000); Süddeutsche Luft-Reederei in Friedrichshafen, of 50,000 marks capital (£2,500); and Westfälische Luftfahrt Ges.m.b.H. in Hüsten, for aerial transport and flying-school service, with 21,000 marks stock.

Anglo-German Alliances.

A note of English-German interests goes through the German Press to the effect that an amalgamation has for the first time since the war taken place by the formation of the Air Traffic Association, Maj.-Gen Brancker partaking from England on behalf of the Aircraft Mfg. Co., and Deutsche Luft-Reederei in Berlin-Johannisthal from Germany. The meeting at the Dutch E.L.T.A. Show cf air navigation companies from different countries is apparently referred to.

It is also stated that Vickers did not partake at this occasion, but desire co-operation with German air service firms, wherefore the Dir. of Need. Engi Techn. Handels Maatschappi in Haag has returned from London with orders to prepare Continental working schemes. As, however, the hostility of Vickers to Germany at present was well known, he did not know whether he should get permit to enter and negotiate in Germany, and so acquired the service of a trader with many good agencies in the hardware trade who came in touch with Vickers some time ago in his business.—E. H

GREECE.

H.M. the King of Greece was taken for a flight over Athens on Nov. 8th by Captain Shakespeare, M.C., in the Handley Page aeroplane which was recently flown there for exhibition purposes.

HOLLAND.

A Royal Dutch Aviation Company has been established at The Hague.

The Danish correspondent of The Aeroplane writes :—

Writing to the effect that German seaplanes were favoured in Holland during the war, and that both an order for such aircraft was contracted in Germany and the interned specimens bought, while the interned Allied naval aircraft were stored away, "Flugsport" regrets that the field of sales in Holland and its colonies has been lost, since a seaplane built by van Berkel's patent on the light modern Brandenburg lines on its first flight in one day succeeded in flying from Amsterdam to Rotterdam and return. Later a quantity production of these aircraft was started, while of the two best-known German seaplane works, the one has stopped activities completely and the other one has dismissed the total technical personnel (the Brandenburg and Friedrichshafen or Gotha concerns are likely referred to here).—E. H.

ITALY.

The Italian correspondent of The Aeroplane writes :—

The Civil Aerial Transport Services.

One has the best grounds for believing that a strong combine of firms has requested the Government to entrust them with the projected civilian aerial transport services, the postal ones included. This solution was reported soon after the Armistice as what the Government wanted.

A New Macchi Aeroplane.

A small Macchi 16 is being tested, I hear, at Malpensa, and has proved very nice to handle and fairly speedy.

To Beat His Record.

From Rome I learn that Ing Marchetti is out to beat his record with a faster Marchetti-Vickers biplane.

The Vienna Aero Commission's Work.

A Vienna-Bukarest non-stop flight, about 1,400 kilometres, is likely to be tried shortly as part of the Vienna Aero Commission's work. Prague, Warsaw, and Pilsen are being made into "sub-centres" (pardon the term) of this mission.

A Rome Aero Show.

An aero show is mooted for 1920 at Rome. It is not yet decided if it is to be international.

The Naples Seaplane Race.

The seaplane races arranged for October at Naples are postponed till next spring. Luckily the Circuit of Sicily took place before the prohibition of flying was pronounced

A New Aviation Weekly.

A new weekly in connection with the movement started at Milan among the ex-combatants (pilots) to protect the sport and trade against all comers has been born at Milan. The first copies to reach me are just what is needed, and the editor, Sig. Attilio Longoni, has everyone's good wishes. The paper is "La Gazetta dell'Aviazione," published at Via Torino No. 10.—T. S. H.

Competitions in 1920.

The Coupe Schneider will be run over a course in 1920 at Venice, a few days before the opening of the automobile meeting. Another aviation meeting to be held about the same time will include (1) a speed trial for machines wishing to qualify for participation in a flight of 1,000 kilometres without landing and with a stated useful load, and (2) a flight of 1,200 kilometres for machines with two or three motors.

NORWAY.

The Danish correspondent of The Aeroplane writes :—

The United Sardine Factories' Seaplane.

A 200 h.p. Benz-engined Lübeck-Travemünde seaplane, built after the Armistice, was supplied to a company in Norway for fishing inspection and got delivered by air. It was flown to Bergen with an intermediate landing in Denmark by the pour-le-merite Naval pilot, Commander at the Zeebrügge Air Station, Capt -Lieut. Christiansen. Director Danielsen, of "United Sardine Factories," its owner, has, at the end of a successful flight to the most northern part of Norway of 2,500 kilometres distance, made the first public announcement of the use of the company's new acquisition, reading to this effect :—

"We bought the seaplane in order to examine the various fishing grounds and to get more raw material than hitherto, and to find out the lack of same. We also acquired the seaplane for express service in our business, as the fishing-grounds are scattered far about, and we can thus get far and inspect most places in a relatively short time. This will facilitate the inspection work much, and the heads can more often visit the branches.

"The experiment is the first, and, so far, the only one in Scandinavian fishing; but we have hitherto had too few chances of employing the seaplane to be able to state the uses to which it can be put, as it rained here for the first six or eight months after it was bought. Yet we have ascertained that the seaplane is strong, and attains a speed of 120 kilometres per hour. A dismantling after every 30 hours' service has hitherto been considered necessary, but this seaplane has flown satisfactorily for 150 hours.

"Two passengers can be carried, as well as the pilot. I partook in the northern flight, which was partly carried out in very rough weather. We have now just finished a shed at the Ask Island for two seaplanes with future acquisitions in view, and are able to receive flying visitors. If the weather permits, I will fly this autumn on the seaplane to Christiania, and would appreciate it if there was a shed there to protect the machine against rain or frost."—Hi.

POLAND.

The Danish correspondent of The Aeroplane writes :—

"Flugsport" reports in its issue of Oct. 29th that Polish commercial concerns are negotiating with the British Handley Page Co. *re* the technical organising of the air line Danzig-Warschau-Krakow. About one and a half tons should be transported in each flight, with the sanction of the Warschau Postmaster. In support of this plan a Poland Aero Club was to be formed at the end of October.

"Flugsport" reports further that the Poland Trade Chamber in Genève (rue Etienne Dumont, No. 22) is contemplating the plan of an aerial service for sending mail and dispatches from Poland across Tschecko Slowakei and Austria, and that the plan is immediately before realising.—E. H.

SPAIN.

The Looping Record.

M. Fronval, a French aviator, made a record number of loops at the "Four Winds" aerodrome, near Madrid, on Oct. 28th. Reuter states that he looped 624 times in a flight lasting 2 hr. 49 min. and 9 sec. The record was hitherto held by an American who made 455 loops in one flight.

The feat is of the nature of a record for falling off a horse a great number of times in a short space of time without breaking one's neck.

SWEDEN.

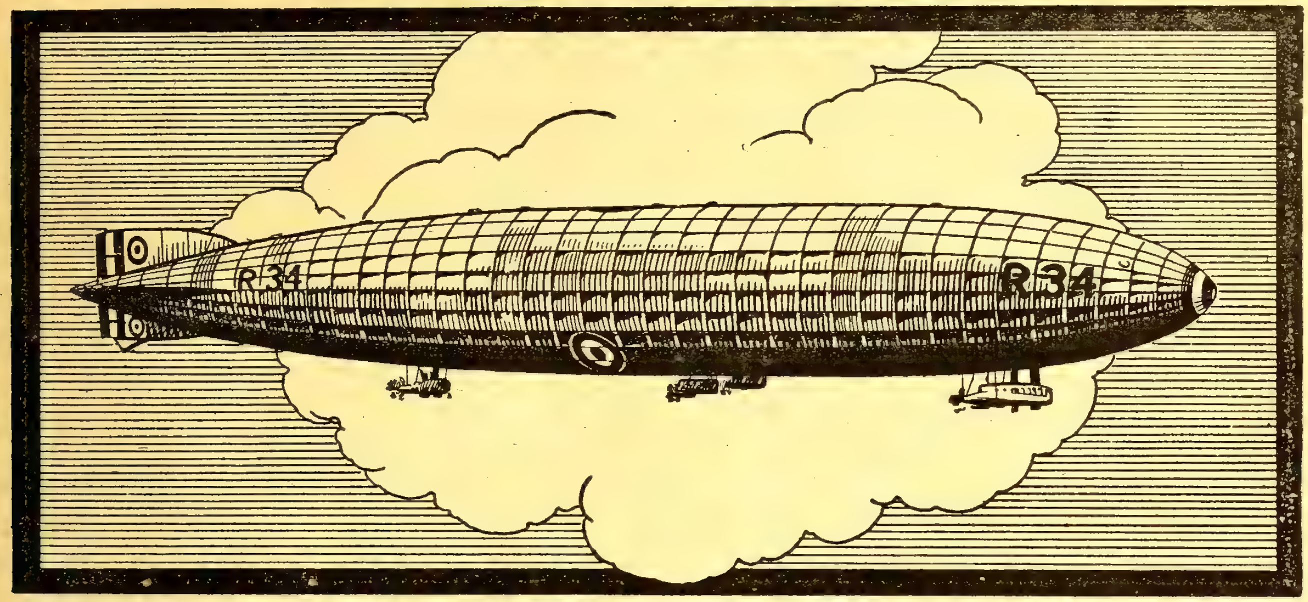
The Danish correspondent of The Aeroplane writes :—

The Handley Page Flight Resumed.

The Handley Page biplane which was damaged in a forced landing from stop of one motor in the start of a flight from the Army aerodrome at Lillestroem, by Christiania, early in the autumn, has now been repaired. Various prospective buyers came forward. After successful trial flights by Captain Stewart, the pilot, the Scandinavian circuit was continued to Stockholm, whence the biplane will return to England *via* Copenhagen and Holland. The passengers were Capt. Stewart's wife and Capt. Meisterlin and wife.—Hi.

SWITZERLAND.

A telegram from Berne on Nov. 7th stated that a provisional air convention between Great Britain and Switzerland was signed on Nov. 6th. An official luncheon was given to the British delegation, after which Col. Beatty made a flight in a Swiss machine over Lake Thun.



"Cordial Appreciation" of the Skill and Energy——

"Sincere Congratulations to All Concerned"——

In these words do the Lords of the Admiralty express their opinion of the firm which produced the engines which enabled R.34 to make her journey across the Atlantic and back.

SUNBEAM-COATALEN AIRCRAFT ENGINES

are Second to none.

THE SUNBEAM MOTOR CAR CO., Ltd.,
MOORFIELD WORKS, WOLVERHAMPTON.

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

ADMIRALTY, Nov. 1st.

To be retired.—Lt. T G. Southwood (Capt., R.A.F.), Nov 1st.

MILITARY.

WAR OFFICE, Nov. 3rd.

TERRITORIAL FORCE.—INFANTRY.—6TH BN. SCOT. RIF.—Sec. Lt. J. S. Monteith to be Lt., and to remain seconded (R.A.F.). May 1st; Sec. Lt. E. Colvill to be Lt., and to remain seconded (R.A.F.), May 1st.

14TH BN. LOND. R.—Sec. Lt. W. W. Jones, M.C., to be Lt., and to remain secd. (R.A.F.), Oct. 26th, 1918 (substituted for that which appeared in "Gazette" of Jan. 25th).

WAR OFFICE, Nov. 5th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—Gen. List.—Sec. Cpl. H. V. D. Read, from R.E., to be temp. Sec. Lt., March 24th, 1918.

INFANTRY.—R. Muns. Fus.—Lt -Col. and Bt. Col. A. M. Bent, C.M.G., on completion of his period of service in comd., is placed on the h.p. list, and retains his present appt. with the R.A.F., March 30th (substituted for the notification in the "Gazette" of March 29th).

WAR OFFICE, Nov. 6th.

REGULAR FORCES.—INFANTRY.—Suff. R.—Lt. J. E. Gurdon, D.F.C., retires on ret. pay on account of ill-health caused by wounds, Nov. 7th.

Linc. R.—G. G. Edgell (temp. Lt., R.A.F.) to be temp. Lt., Feb 16th.

WAR OFFICE, Nov. 7th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—The following appointment is made:—Flying Officer (Obsr.).—Lt. J. A. Hollis (E. Yorks. R.), Dec. 12th, 1916.

ROYAL REGIMENT OF ARTILLERY.—Lt. J. C. Moolman, M.C., relinquishes the actg. rank. of Maj. on ceasing to comd. an Anti-Aircraft Batt., May 25th.

INFANTRY.—Wilts. R.—Temp. Sec. Lt. C. B. Percy resigns his commn. on appointment to R.A.F., Aug. 21st, 1918.

MEMORANDUM.—The notification in "Gazette" of March 20th, 1918, regarding Lt. G. Iredell, under "Supplementary to Regular Units or Corps, Royal Flying Corps, Mil. Wing," is cancelled.

REGULAR FORCES.—OVERSEA FORCES.—CANADA.—New Brunswick R.—Temp. Lt. G. R. Harrison ceases to be secd. for duty with the R.A.F., Oct. 2nd.

WAR OFFICE, Nov. 8th.

REGULAR FORCES.—COMMANDS AND STAFF.—The following appointment is made:—

PERSONAL STAFF.—A.D.C.—Lt. A. F. Brooke, 10th Hrs. (Capt., R.A.F.), July 3rd, 1918 (substituted for notification in "Gazette" of Aug. 27th, 1918).

ROYAL REGIMENT OF ARTILLERY.—R.G.A.—Maj. and Bt. Lt.-Col. C. A. Mortimore, D.S.O., R.F.A., to be actg. Lt.-Col. while empld. as Anti-Aircraft Comdr., June 27th.

Lt. (actg. Capt.) W. E. Vaudrey, M.C., to be actg. Maj while empld. as Liaison Officer, R.A.F., from July 9th, 1918, to Feb. 13th

AIR FORCE.

AIR MINISTRY, Nov. 4th.

R.A.F.—The folig. are granted Perm. Commns. in the R.A.F. in the ranks stated, with effect from Aug. 1st:—Flt. Lt. E. L. Williams, M.C. (A. and S.); Flying Officer A. C. Collier (A.).

The notification appearing in the London "Gazette" of Aug. 1st appointing the following officers to Perm. Commns. is cancelled:—Capt. M. O. F. England (O.), Capt. C. J. Galpin, D.S.O. (A. and S.), Capt. E. A. Jackson (T.), Capt W. S. Newton Clare, M.B.E (Ad.). Capt. C. S. MacNab (S.O.), Lt. F. M. I. Watts, M.B.E. (T.), Lt. R. B. T. Hedges (A.), Lt. W. Myers, M.C., D.C.M. (S.O.), Lt. J. M. McEntegart (T.).

The following temp. appointments are made:—

Staff Officers, 2nd Class.—(Q.).—Lt. (Hon. Maj.) C. A. Cuthill, and to be actg. Maj. while so empld., from June 21st, 1918, to Nov. 25th, 1918. (Air).—Flt. Lt. W. B. Callaway, A.F.C., Sept. 1st; (T.).—Sqdn. Ldr. F. J. Rutland, D.S.C., A.M., Sept. 1st; (P.)—Sqdn. Ldr. G. H. Thomson, O.B.E., Sept. 1st.

Staff Officer, 3rd Class.—(Air).—Flt. Lt. W. P. Groves, Sept. 1st; Flt Lt. A. W. Mylne, Oct. 4th; (T.)—Flying Officer P. A. Simmons, Sept. 15th; (P.).—Flt. Lt. H. V. German, Sept. 25th; Flying Officer G. D. Ashby, Sept. 26th; (Q.).—Flt. Lt. R. S. Sugden, A.F.C., Sept. 27th.

Staff Officer, 4th Class.—(T.).—Flying Officer J. R. R Harvey, Sept. 22nd.

FLYING BRANCH.—Sqdn. Ldr. (actg. Wing-Cmdr.) R. Grey relinquishes the actg. rank of Wing-Cmdr. on ceasing to be empld. as Wing-Cmdr. (A.), Oct. 8th.

Capt. W. W. Carey-Thomas, M.C., is graded for purposes of pay and allowances as Maj. while empld. as Maj. (A.), from May 1st to Sept. 29th

Capt. L. C. W. Trend is graded for purposes of pay and allowances as Capt. while empld. as Capt (A. and S.), from May 1st to July 25th.

Lt. R. E. Butler to be actg. Capt. while empld. as Capt. (A.), from Nov. 1st, 1918, to April 25th (substituted for notification in "Gazette" of Oct. 21st).

Flying Officer V. M. C. B. de Sarigny to be actg. Flt. Lt. while empld. as Flt Lt. (K.B.), from Aug. 1st to Oct. 14th

The following Lts. are graded for purposes of pay and allowances as Capts. while empld. as Capts. (A.):—H. R. Gardner, to June 1st; W. D. Knibbs, to Aug. 31st; H. B. Russell, to July 31st (May 1st).

Flying Officer (actg. Flt. Lt.) F. Lord, D.F.C., relinquishes the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lt. (A.), Oct. 8th

Flying Officer A. V. Burbury, M.C., to be Flying Officer (A.), from (S.O.), Oct. 7th.

Flying Officer A. F. Lang to be Flying Officer (O.), from (T.), Aug. 1st (substituted for notification in the "Gazette" of Sept. 26th).

Sec. Lt. (Hon. Lt.) G. L. Parkinson, M.C., to be Lt., June 22nd, 1918.

Pilot Officers to be Flying Officers.—C. H. W Clarke, May 28th; V. M. Mitchell, July 24th; J. L. Booth, Oct. 1st.

Sec Lt. G. A. Thompson (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), March 27th.

Lt. D. A. A. Shepperson (Lt., Som. L.I.) relinquishes his commn. on ceasing to be empld., and is granted the rank of Capt., Sept. 10th (substituted for notification in the "Gazette" of Sept. 19th).

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. G. R. Harrison (Lt., New Bruns. R.), Oct. 2nd; Capt. G. E. Chadwick, M.C. (Capt., E. Lan. R.), Oct. 12th; Lt A. R. Walker (Lt., Gord. Highrs.), Oct. 13th; Capt. P. E. M. Le Gallais, A.F.C. (Lt., R. Suss. R.), Lt. G. W. T. Pereira (Lt., Som. L.I.), Oct. 15th; Capt. E. A. Packe (Lt., Oxf. and Bucks. L.I.), Oct. 16th; Lt. A. H. St. Clair, M.C. (Arg. and Suth'd Highrs.), Oct. 18th; Sec Lt (Hon Lt.) H. Cooper, M.C. (Lt., R. Fus.), Oct. 20th; Sec. Lt. (Hon. Capt.) H. M. P. Hewett (Capt., Ryl. Dgns.), Oct. 29th.

Transferred to unempld. list:—Sec. Lt. C. R. Knowles, Sec. Lt. G. W. Lawson, Sec. Lt. A. H. McKeown, Sec. Lt. R. B. Paine, Sec. Lt. E. J. Pond, Feb. 1st; Lt. J. B. Rose, Feb. 20th; Sec. Lt. S. J. Glavin, Feb. 25th; Sec. Lt. A. E. McKenna, Feb. 27th; Lt. D. B. Sinclair, March 1st; Sec. Lt. J. R. Robertson, March 12th; Sec. Lt. (Hon. Lt.) J. F. Swindells, March 13th; Lt. C. Muller-Chateau, March 18th; Lt. C. W. B. Martin, April 10th; Lt. R. T. Irvine, Lt. J. D. Smith, April 19th; Lt. R. Watts, April 27th; Lt. F. B. Farquharson, April 30th; Lt. R. V. Sessions, May 25th; Sec. Lt. H. T. Foxton, June 6th; Sec. Lt. R. C. Teen, June 8th; Capt. A. C. Jowett, June 30th; Lt. J. K. Finlay, July 3rd (substituted for notification in "Gazette" of July 15th); Sec. Lt. R. C. Tidbury, July 10th; Lt. P. T. Hunt, Aug. 7th (substituted for notification in "Gazette" of Aug. 1st); Lt C. D. G. Taylor, Aug. 20th; Lt. B. Marshal, Aug. 23rd, Sec. Lt. G. A. Livett, Aug. 26th; Sec. Lt. G. W. Garner-Smith, Aug. 29th; Lt. M. W. Piercy, A.F.C., Sept. 3rd; Sec. Lt. G. A. Millbank, Sept. 6th; Capt. A. E. Godfrey, M.C., A.F.C., Sept. 9th; Lt. O. J. F. Jones-Lloyd, Sept. 10th (substituted for notification in "Gazette" of Aug 5th); Lt. W. H. Shell, Sept. 12th; Lt. N. R. Smuts, Sept. 13th; Sec. Lt. W. E. Taylor, Sept. 15th; Lt. R. C Ayton, Sec. Lt. W. P. Lewis, Sept. 16th; Sec. Lt. G. Butters, Sept. 25th; Sec. Lt. G. K. Alling, Sec. Lt. N. Sagan, Sec. Lt. R. K. Tarr, Sept. 26th; Sec. Lt. N. Hickson, Capt. J. Mitchell, M.C., Sept. 27th; Sec. Lt. J. B. Abraham, Sec. Lt. O. R Allen, Sec. Lt. C. E. Arnold, Sec. Lt. L. Ashton, Lt. T. L. Atkinson, Sec. Lt. R. A. Snelgrove, Sec. Lt. T. E. Snelgrove, Sec. Lt. F. L. Southgate, Sec. Lt J. T. Taylor, Lt. P. D. Taylor, Sec. Lt. W. F. Thorne, Sec. Lt. R. G. Trenholme, Sec. Lt. W. H. Truedale, Lt. K. Whitney, Sept. 28th; Capt. G. S. Abbott, Sec. Lt. G. Abrahams, Sec. Lt. D. H. Alexander, Sec. Lt G H. Alexander, Capt. W. M Alexander, D.S.C., Lt. H. N. Arthur, Sec. Lt. G. W. Ashbrook, Lt. S. C. J. Askin, Sec. Lt. P. M. Sangster, Sec Lt. A. C. Smedley, Lt. V. W. Thompson, Lt. P. F. Townley, Sec Lt. H. L. Turner, Sept. 29th; Lt. T. C. S. Tuffield, Oct. 1st; Lt. S S. Turnbull, Oct. 5th; Lt. K. V. Anderson, Oct. 6th; Lt. A. P Atkins, Sec. Lt. C. J. Green, Sec. Lt. H. Hinchcliffe. Lt. R. J. Housden, Sec. Lt. D. W. S. Ireland, Lt E. B Jone, Lt. G. N. Prout, Sec. Lt. R. H. Shutt, Sec. Lt. R. Tindle, Oct. 9th; Sec. Lt. H. C T. Browne, Sec. Lt. A. A. Butt, Sec. Lt. H. C. Crowder, Sec. Lt J E. H. Littlewood, Lt. A. W. Mackey, Sec. Lt. A. Y. Paton, D.C.M., Sec. Lt. H. W. Petter, Lt. D. B. Robertson, Sec. Lt. M. Tallentire, Lt. J. H. Weatherill, Oct. 10th; Lt. F. H. Bell, Sec. Lt. C. Gardner, Sec. Lt. W. S. McDonald. Lt. G. A Morgan, A.F.C., Lt. E. J. Noble, Lt. E. D. Soar, Capt. J. Weaver, Oct. 11th; Sec. Lt. R. Alcock, Lt. F. P. Bruce Austin, Lt. E. G. Frost, Lt. H F. Game, A.F.C., Lt. J. B. Hall, Lt. G. R. Judge, Sec. Lt. J. F. F Liddy, Sec. Lt. F. Meehan, Sec. Lt. M. R. Prodger, Oct. 12th; Maj. G. C Colmore, Sec. Lt. E. D. Drew, Lt. G. Meikle, Lt. T. C. Welch, Sec. Lt. L. F. Williamson, Oct. 13th; Lt. P. F. Antleme, Lt. G. J. Carroll, Lt. N Clemence, Sec. Lt. T. N. Donovan, Lt. (Hon. Capt.) S. B. Edwards, Lt J. C Fitzmaurice, Sec. Lt. R. E. H Goodhead, Lt. R. Knight, Sec. Lt. E. V. Lockyer, Lt. M. V. McKeon, Sec. Lt. F. W. Moulton, Maj. E. F. Moyes, Sec. Lt. B. Outram, Sec. Lt. J. Sykes, Oct. 14th; Sec Lt. E. B. F. Auld, Lt. N. B. Birkett, Lt. R. A. Boyd, Sec. Lt. J. A. B. Carr-Halfey, Sec. Lt. F. R. Eaton, Lt. C. R. Field, Sec. Lt. G. S. Fenwick, Sec. Lt. I. H. Grabousky, Lt. A. F. James, Sec. Lt. T. Lamb, Lt. S. M. Litten, Lt. K. Loughlin, Lt. C. A. McConchie, Sec. Lt. H. T. Martin, Sec. Lt. C. G. Milne, Lt. W. B. E. Powell, Oct. 15th; Lt. G. W. Burgess, Lt. H. E. Cardwell, Sec. Lt. F. A. Downes, Sec. Lt. A. S. D. Laidlaw, Capt. W. N. Tees, Lt. (Hon. Capt.) R. S. Witchell, Oct. 16th; Lt. M. R. Banks, Sec. Lt. C. N. C. Dickson, Lt. A. J. O. Farina, D.F.C., Lt. B. C. Gay, Lt. D. E. Nicolle, Sec. Lt. F. W. Perrin, Capt. L. C. Shoppee, D.S.C., Sec. Lt. C. W. Trimmell, Lt. A. J. Virgo, Oct. 17th; Sec. Lt. W. A. C. Ballantine, Lt. A. F. Buckley, Lt. V. P. Feather, Sec. Lt. W. E. Finch, Lt. S. N. Menzies, Sec. Lt. A. L. Symes, Oct. 18th; Lt. E. B. W. Bartlett, Lt. W. P. Busher, Sec. Lt. W. R. N. Whiston, Oct. 19th; Sec. Lt. H. E. Brenack, Lt. J. N. Catling, Sec. Lt. T. P. Speakman, Lt. J. Stewart, Oct. 20th; Sec. Lt. A. J. Black, Sec. Lt. F. G. Brown, Lt. P. P. Butters, Lt. J. Coates, Lt. R. Coulthard, Lt. J. F. Dewar, Sec. Lt. C. W. Griffin, Lt. C. G. Halliday, Sec. Lt. A. J. Kelly, Sec. Lt. G. F. Lane, Sec. Lt. H. V. Lewis, Lt. T. H. L. Lewis, Lt. R. D. Linford, Sec. Lt. D. Simmons, Sec. Lt. C. A. Spooner, Lt. M. L. Trapacna-Leroy, Lt. C. B. Wilson, Oct. 21st; Lt. J. A. Eyres, Lt. T C. Story, Sec. Lt. B. S. W. Taylor, D.F.C., Sec. Lt. J. C. Wallace, Lt. F. H. Wrenn, Oct. 22nd; Sec. Lt. (Hon. Lt.) L. A. Brett, Lt. H. C. Burdett, Sec. Lt. R. M. Guiney, Lt. A. C. Hine, Lt. A. Sykes, Oct. 23rd; Sec. Lt. O. E. Coleman, Oct. 24th; Sec. Lt. W. Urwin, Oct. 25th.

Lt. (Hon. Capt.) C. S. Emden, D.F.C., relinquishes his commn. on account of ill-health caused by wounds and is permitted to retain rank of Capt., Oct. 27th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank:—E. R. Bullimore (contracted on active service), Oct. 28th; Lt. W. L. Sumsion (caused by wounds), Oct. 29th.

Lt. (Hon. Capt.) F. L. Von Stieglitz (Capt., Connaught Rangers) relinquishes his commn. on account of ill-health contracted on active service, Nov. 4th.

Sec Lt. J. McRobert relinquishes his commn. on account of ill-health contracted on active service and is permitted to retain his rank, Oct. 29th.

Lt. C. G. Ronaldson-Clark to take rank and precedence as if his appointment as Lt. bore date Oct. 1st, 1918.

Sec. Lt. D. C. Sewell is dismissed the Service by sentence of General Court Martial, Oct. 14th.

The Christian names of Sec. Lt. Alexander Alfred Phillips are as now described, and not "Alexander Arthur" as stated in the "Gazette" of Dec. 31st, 1918.

The notification in the "Gazette" of Aug. 26th concerning Sec. Lt. Alexander Alfred Phillips is cancelled.

The notification in the "Gazette" of June 24th concerning Lt. E. I. Sutcliffe is cancelled.

The notification in the "Gazette" of Oct. 17th concerning Sec. Lt. W. W. Smith is cancelled.

The notification in the "Gazette" of Sept. 12th concerning Sec. Lt. F. W. B. Anderson is cancelled.

The noticfiation in the "Gazette" of Oct. 24th concerning Sec. Lt. S. T. Tipper, wherein this officer was shown "transferred to the unempld. list," is cancelled.

The notification in the "Gazette" of July 1st concerning Lt. J. R. Finlay is cancelled.

The notification in the "Gazette" of Aug 19th concerning Lt. W. Rodger is cancelled.

The notification in the "Gazette" of Oct. 14th concerning Lt. R. C. Steele, D.S.O., is cancelled.

The notification in the "Gazette" of Oct. 31st concerning Capt. H. Hemming, A.S.C. (Lt., Worc. R.), is cancelled.

ADMINISTRATIVE BRANCH.—The following Capts. are graded for the purposes of pay and allowances as Maj. whilst empld as Maj.:—A. Wombwell, April 28th; T. Gash, from May 1st to Aug. 5th; W. F. Routley, from May 1st to Aug. 11th.

London-Paris
Air Express

Summary of First Eleven Weeks' Flying.

August 25th, 1919, to November 8th, 1919.

Flights Scheduled	166
Flights accomplished	149
Prevented by weather	8
Interrupted by weather	6
Interrupted by mechanical defects	3
Number of Miles flown	39,000
Average Speed (M.P.H.)	105

The following is a summary from official reports of the weather flown through during these eleven weeks.

Days favourable for flying	17
„ unfavourable for flying	30
„ noted officially as "unfit" for flying	19

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Lt. G. Oliver is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., from May 19th to Aug. 5th.

Flt. Lt. J. A. Hartcup to be Flt. Lt., from (S.O.), Sept. 10th (substituted for notification in the "Gazette" of Oct. 24th.

Lt. R. M. Nicholls to be Lt., from (O.), and is graded for purposes of pay and allowances as Capt., whilst empld. as Capt., from March 13th to Sept. 23rd.

The following are graded for purposes of pay and allowances as Capt. while empld. as Capt.:—Lt. G. D. Rowden, from March 27th to July 29th; Lt. (Hon. Capt.) G. Davies, from May 1st to Oct 10th; Lt. C. G. S. Fitzgerald, May 1st; Lt. A. L. Morris, from May 1st to Oct. 13th; Lt. D. G. Phillippe, M.C., from (O), May 1st; Lt. J. D. Loraine, from May 19th to Aug. 1st; Sec. Lt (Hon Lt.) J. A. Bonnyman, M.B.E., from May 1st to May 21st; Sec. Lt. J. Mellor, from May 1st to Aug. 9th.

Sec. Lt. G. R. Biggs is graded for purposes of pay and allowances as Capt. while specially empld., from (A.), April 10th (substituted for notification in "Gazette" of Oct 3rd).

Lt. (Hon. Capt.) A. C. T. Applin to be Lt. (Hon. Capt.), from (K.B.), April 17th.

Flying Officer (actg. Maj.) A. D. Carey relinquishes the actg. rank of Maj. on ceasing to be empld. as Maj., from (S.O.), Oct. 8th.

Sec. Lt. R. R. W. Millward to be Lt, Aug. 21st, 1918 (substituted for notification in "Gazette" of Oct. 17th.

Pilot Officer H. H Ffrench to be Flying Officer, Sept. 18th.

Sec. Lt. F. McKeown is graded for purposes of pay and allowances as Lt. while empld. as Lt., from May 1st to Sept. 29th.

Lt.-Col. F. H. G. Playfair (Lt.-Col, T.F. Res.) relinquishes his commn. on ceasing to be empld., Oct. 31st

Transferred to the unempld list:—Capt (actg. Maj) W. B. Armitage, Feb. 23rd; Lt. S. Thompson, April 27th (substituted for notification in "Gazette" of July 15th), Sec. Lt. W. D. Owen, May 8th; Sec. Lt. F. Dunlop, June 5th (substituted for notification in "Gazette" of Sept. 9th); Sec. Lt. A. A. Mitchell, Sept. 6th; Sec. Lt. G. A. Middleweek, Sept 7th; Sec Lt. R. Parker, Sept. 19th; Sec. Lt W. E. Tunks, Sept. 28th; Sec. Lt. J. H Thompson, Sept. 29th; Lt. (Hon. Capt.) G. Davies, Lt. W. H Peat, Sec. Lt. H. W. Rigden, Oct 10th; Lt. (Hon. Capt.) C. S. Burdon, Lt J. A. Gorges, Oct. 11th; Capt. L. A. F. Foers, M.C., Oct. 12th; Lt. A. L. Morris, Lt. L. Singer, Oct 13th; Lt. W. E. Fox, Oct. 15th; Sec. Lt. G. J. Mackie, D.C.M., Lt. P L. Stephens, Oct. 16th; Sec. Lt. G. J. Joint, Lt. H. M. Kendale, Oct. 17th; Capt. K. D. Abercromby, Sec. Lt. E. J. Hodgson-Stevens, Lt. J. W. Mennie, Lt. A. W. Rouse, Oct. 18th; Sec. Lt. W. M. Everett, Sec. Lt. C. E. Hodgkinson, Lt F. K. Moncur, Lt. A. A. Savell, Oct. 19th; Sec Lt. C. P. Andrews, Lt. A J. Chambers, Maj. F. F. Chambers, O.B.E., Oct. 20th; Lt. J. G. G. Ballard, Sec Lt. L. V. E. Charlton, Lt. (Hon. Capt.) J. Gerrard, Sec. Lt E. Higgs, Capt. W R. Kerr, Lt. H. Macpherson, Capt. E. L. Parrett, Sec. Lt. W F. F. Prins, Lt. J. E. W. Sugden, Oct. 21st; Lt. G. M. Darragh, Oct. 22nd; Maj. W. Burningham-White, Sec. Lt. H. S. Fielding, Lt. S. G. K. Rapley, Lt. E. Winter, Oct. 23rd; Capt. S. O. Barnsdale, Sec Lt. F. T. Dixon, Oct. 24th.

Lt. H. G. Mitchell (Hussars) relinquishes his commn on account of ill-health contracted on active service, Oct 23rd.

Sec. Lt. (Hon. Lt.) J. A. Redvers Buller relinquishes his commn. on account of ill-health contracted on active service and retains the rank of Lt., Oct. 29th.

The rank of Lt. D. J. Fryer is as now described, and not Sec. Lt. as stated in "Gazette" of Sept. 23rd.

The initials of Sec. Lt. A. F. Johnston are as now described and not "A. P." as stated in "Gazette" of May 27th.

The notification in "Gazette" of April 25th; concerning Sec. Lt J. Silvester is cancelled.

TECHNICAL BRANCH.—Sqdn. Ldr. (actg. Wing Cmdr.) C. Barber relinquishes the actg. rank of Wing Cmdr. on ceasing to be empld. as Wing Cmdr., Grade (B), Oct. 18th.

Capt. G. D. Nelson, D.S.C., A.F.C., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A), from April 27th to July 31st.

Lt. A. E. Layton is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A), from May 1st to July 7th.

Flt. Lt. (actg. Sqdn. Ldr.) E. W. F. Cherry, O.B.E., to be Flt. Lt., Grade (B), and relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., from (S O.), Oct. 22nd.

Capt. (actg. Maj.) W. P. Groves to be Capt., Grade (B), and relinquishes the actg. rank of Maj. on ceasing to be empld. as Maj., from (S.O.), July 26th.

The following Lts. are graded for purposes of pay and allowances as Capt. while empld. as Capt., Grade (A):—B. S. Crimp, F. W. Clarke. D. Richardson, May 1st; P. S. Laughton, June 2nd; L. L. W. Smythe, June 26th; F. Thomas, Sept. 1st.

Sec. Lt. S. Jupp is graded for pay and allowances as Capt. while empld. as Capt., Grade (A), Oct. 9th, 1918 (substituted for notification in the "Gazette" of May 27th).

Sec Lt. (Hon Capt.) F C. Marsh is graded for purposes of pay and allowances as Capt. while empld. as Capt., Grade (B), May 1st (substituted for notification in the "Gazette" of Oct. 21st).

Pilot Officer (Hon. Flying Officer) C. Bishop to be actg. Flt. Lt. (without the pay and allowances of that rank) while empld. as Flt. Lt., Grade (B), Sept. 15th (substd. for notificn in "Gazette," Oct. 10th).

Lt. J. E. Ruthven to be Lt., Grade (A), from (Ad.), from April 1st, 1918, to Sept. 11th, 1918.

The following are graded for purposes of pay and allowances as Lts. while empld. as Lts., Grade (A.):—Lt. F. Thomas, from Feb. 10th to Aug. 31st; Lt. H. G. Cook, D.S.M., April 7th; Sec. Lt. (Hon. Lt.) R. O. C. Bush, Aug. 20th, 1918; Sec Lt. G. C. Walsh, June 14th.

Lt. E. W. Lawrence is graded for purposes of pay and allowances as Lt. while empld. as Lt., Grade (B), Nov. 12th, 1918 (substituted for notification in the "Gazette" of Oct. 14th

Sec. Lts. to be Lts.:—(Hon. Lt.) W. Bagnall, April 2nd, 1918 (substituted for notification in the "Gazette" of Sept. 26th); S. T. Kemp, Feb. 28th (substituted for notification in the "Gazette" of March 7th).

Pilot Officers to be Flying Officers without the pay and allowances of that rank:—F. A. Benfield, W. J. Coadwell, H. Fellows, C. H. Whitlock, Oct. 1st.

Sec. Lt. H. B. Brown to be Sec. Lt., Grade (A.), from (Ad.), July 17th, 1918 (substituted for notification in the "Gazettes" of Oct. 3rd and Sept. 5th).

Sec. Lt. H. Sleigh to be Sec. Lt., Grade (B), from (Ad.), Aug. 6th, 1918 (substituted for notification in the "Gazette" of Sept. 7th, 1918).

Pilot Officer J. E. Neary to be Pilot Officer, from (Ad.), Oct. 23rd.

Transferred to the unempld list:—Sec. Lt. (Hon. Lt.) S. P. Ashton, May 25th; Capt. C. R. Evershed, Aug. 1st; Lt. C. W. Duval, Aug. 12th; Sec. Lt. (Hon. Lt.) R. E. A. Mallett, M.C., Aug. 26th; Lt. L. O. Millington, Sec. Lt. R Smith, Sept. 20th; Sec. Lt. H. Reynolds, Sept. 30th; Sec. Lt. H. B. Hinde, Oct. 8th; Lt. A. E. Burton, Sec. Lt. A. E. Wycherley, Oct. 9th; Sec. Lt. A. T. Bebbington, Sec. Lt. H. Fraser, Lt. E. J. Goodfellow, Capt. W. S. Hammond, O.B.E., Sec. Lt. B. A. Higgins, Sec. Lt. F. J. Harman-Fisher, Sec. Lt. R. Fell, Sec. Lt. C. M. Wightman, Oct. 10th; Sec Lt. T. R. Davies, Sec. Lt. (Hon. Capt.) J H. McCullock, Sec. Lt. S. W. Turner, Oct. 11th; Lt. W. H. Fearnsides, Oct. 12th; Sec. Lt. A. J. Hale, Oct. 13th; Sec. Lt. N. W. Chandler, Sec. Lt. S J. Collcutt, Capt. S. P. Holloway, Sec Lt. F. E. P. Langton, Capt. G. R. Moody, Lt. L. H. Straker, Sec. Lt. (Hon. Lt.) N W. Walmsley, Sec. Lt. H. E. Young, Oct. 14th; Capt. G. H. W. Dawson, Sec. Lt. R. J. Finch, Sec. Lt. B. G. Fletcher, Sec. Lt. W. T. Henry, Sec. Lt. A. G. C. Potts, Capt V. H. Ridewood, Oct. 15th; Sec. Lt. J. S. Begg, Capt. P. M. Hampshire, Sec. Lt. G. R. D. Hogg, Lt. N. S. Lott, Lt. (actg. Capt.) H. G. Wood, Lt F. B. Woods, Oct. 16th; Lt. H. W. Armstrong, Capt. G. H. F. Catherall, Sec. Lt. H. A. J. Edgley, Capt. H. F. Hodges, Sec. Lt. E. Le Couteur, Sec. Lt. (actg. Lt.) H. D. Lumb, Capt. N. Vaux, Oct. 17th; Sec. Lt. H. Wearing, Sec. Lt. (Hon. Capt.) R. D. Wills, Oct. 19th; Sec. Lt. (Hon. Capt.) W. V. Churchill-Longman, Capt. H. O. Merriman, Lt. J. Milton, Capt. C. F. Smith, Oct. 20th; Capt. H. G. W. Cox, Sec. Lt. L. T. Holmes, Lt. (Hon Capt.) G. R. G. Topham, Oct. 21st; Lt. J. E. S. Alexander, Oct. 22nd; Sec. Lt. (Hon. Lt.) L. H. Bainton, Oct. 23rd; Capt. J. H. B. Burgess, Oct. 24th.

The notification in "Gazette" of July 8th concerning Capt. F. R. Hardie is cancelled.

The notification in "Gazette" of Oct. 17th concerning Capt. P. W. Goodchild is cancelled.

The notification in "Gazette" of Oct. 10th concerning Sec. Lt. S. Japp is cancelled.

MEDICAL BRANCH.—Capt. (actg. Maj.) H. R. B. Hull (Surgeon Lt., R.N.) relinquishes his commn on reversion to R.N., Oct. 15th.

Transferred to the unempld. list:—Capt. W. Lessey, Oct. 1st; Capt. W. T. Williamson, Oct. 17th; Capt. F. N. V. Dyer, Oct. 21st.

CHAPLAINS BRANCH.—Transferred to the unempld. list:—The Rev. O. W. E. Grant, Sept. 28th; the Rev. E. A. Gillespie, M.A., Oct. 15th; the Rev. G. F. Naylor, Oct. 21st.

MEMORANDUM.—Flying Officer W. R. Holroyd to be Hon. Flt. Lt. Aug. 31st, 1918.

The following temp. Hon. Lts. relinquish their commns on ceasing to be empld.:—J. Beek, April 16th; W. B. Gibson, Sept. 16th; B. Coulam, J. J. A Gilmore, J. B. Gott, F. Greenall, F. R. Newton, J. H. Woodruff, Oct. 16th.

Transferred to the unempld. list:—Capt. (actg. Maj.) W. A. Legg, from (S.O.), Oct. 11th; Lt. A. H. Burmann, from (S.O.), Oct. 18th; Lt. J. W. Sawyer (E. Yorks R.), from (S.O.), Oct. 19th, Capt. (actg. Maj.) R. A. Laws, from (S.O.), Oct. 21st.

The following Cadets are granted hon. commns. as Sec. Lts.:—178841 C. J. Armes, Jan. 6th; 177049 N. Davey, Jan. 30th; 19805 A. M. McColl, Feb. 1st; 13025 V. W. Godwin, Feb. 27th; 432201 C. A. Ashwell, March 24th; 558051 M. Block, March 26th (substituted for notification in "Gazette" of Oct. 3rd, wherein this Cadet was described as 55805 M. Block); 200340 R. H. Scrine, June 1st.

AIR MINISTRY, Nov. 7th.

R.A.F.—The following are granted permanent commns. in the ranks stated:—Flight Lt.—L. Wanless-O'Gowan (A.), Aug. 1st.

Flying Officer.—E. D. G. Galley, M.C., AF.C. (A.), Aug. 1st

The notification appearing in "Gazette" of Oct. 28th appointing Flt. Lt. J. B. Walmsley, D.F.C. (A.), to a permanent commn. is cancelled.

The rank of Flt. Lt. E. C. Emmett, M.C., D.F.C., is as now described, and not Capt. as stated in "Gazette" of Oct 28th.

The name of Flying Officer R. Jones is as now described, and not R. Jones, M.C., as stated in "Gazette" of Aug. 1st.

FLYING BRANCH.—Wing Comdr. A D. Cunningham, O.B.E., to be Wing Comdr. (A'ship) from Dep. Dir., Nov. 3rd.

Maj. (actg. Lt.-Col.) R J. F. Barton, O.B.E., to be Maj (A.), and relinquishes actg. rank of Lt.-Col. on ceasing to be empld. as Lt.-Col., from (S.O.), March 3rd.

Lt. G. F. Moody is graded for purposes of pay and allowances as Capt while empld. as Capt. (A. and S.), from May 1st to Sept. 21st.

Flying Officer W. K. Sutton relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld as Flt. L. (A.), Oct. 18th.

Flying Officer (actg. Flt. Lt.) W. H. Park, M.C., relinquishes actg. rank of Flt. Lt. on ceasing to be empld. as Flt Lt (A. and S.), Oct. 27th.

Pilot Officer L. J. Chandler to be Flying Officer, Oct. 1st.

Lt. V. W. Kilroe relinquishes his commn. on ceasing to be empld. and is permitted to retain his rank, July 23rd.

Lt.-Col. D. Mackenzie (Maj., E. Lancs. R) relinquishes his commn. on ceasing to be empld., and is permitted to retain his rank, Nov. 1st.

The following relinquish their commissions on ceasing to be employed:—Lt. J. R. Taylor (Lt., Rif. Bgde), July 27th, 1918; Lt. F. O. Rose (Lt., Essex R.), Oct. 9th; Capt W. E. Molesworth, M.C. (Capt., R. Munster Fus.), Oct. 15th; Lt. R. A. Derne (Lt., Wilts. R.), Oct. 22nd; Lt. H. N. Loch, D.F.C. (Capt., Gurkha Rif.), Oct. 24th; Lt.-Col. R. H. Mornement, O.B.E. (Surg. Comdr., R.N.), Oct. 31st; Col. B. H. H. Cooke, C.M.G., C B.E., D.S.O. (Lt.-Col. extra regimentally empld.); Capt. H. W. M. Paul (Capt., Middx. R.), Nov. 1st; Lt-Col. A. C. H. MacLean (Maj., R. Scots), Nov. 5th; Lt. A. T. Essex (Sec. Lt., Brit. W. Indies R.), Nov. 6th.

Transferred to unempld. list:—Sec. Lt. W. S. Durkin, Sec. Lt. V. B. Nash, Feb. 1st; Sec. Lt. H. E. Davis, Feb. 19th; Sec Lt. H. M. Fridjohn, Feb. 27th; Lt. J. K. Shook, March 1st; Sec. Lt. H. R. Abey, March 15th; Lt. R. Sykes, D.F.C., March 17th; Lt G. N. Snowball, April 5th (substituted for notification in "Gazette" of May 9th); Lt G. A. Elmslie, April 15th; Sec. Lt (Hon. Lt.) W. G. Stewart, April 25th (substituted for notification in "Gazette" of July 18th); Lt. R. H. Johnson, May 30th; Lt. H Ibbotson, June 28th; Lt. A. F. Moyles, Aug 4th; Capt. H. L. H. Owen, A F.C., Aug. 22nd; Sec. Lt (Hon. Lt.) A. M. Parkes, Lt. T. I. Phillips, Sec. Lt. R. I. Quigg, Aug. 29th; Sec. Lt. H V. Peberdy, Aug. 30th; Lt. P. M. Rogers, Sept 1st; Lt. E. T. Osborne, Sept. 3rd; Sec. Lt. F. B. Norris, Capt. G. G. Ommanney, Sept. 4th; Lt. E. Foster, Sec. Lt. H. C. Norman, Lt H. G. Owen, Sec. Lt. (Hon. Lt.) S. P. Pattison, Sec. Lt. I. M. M. Perman, Sept. 5th; Sec. Lt. H W. F. Pennick, Lt. A. Pinks, Sept 7th; Sec. Lt. G. W. Pearce, Sept. 8th; Lt. R. A Curry, Sept. 10th; Lt. A. Newman, M.C., D.F.C., Sec. Lt. W. Wallace, Sept. 11th; Capt. W. H. Oliver, Lt. J. B. Palmer, Sec Lt. O. Playne, Sept. 12th; Lt. A. R. Nock, D F.C., Sec. Lt. W. R. Pearson, Sept 15th; Sec. Lt. P. J. Parry, Sept. 16th; Lt. F. A. S. Nesbitt. Sept. 17th; Sec. Lt. T. Ll. Oliver, Lt. V. R. W Owens, Lt. L. H. Paddle, Sept. 20th; Sec. Lt. (Hon. Lt.) E. Lawson, Sept. 23rd; Lt. W. N. Owen, Sept. 26th; Lt. J. W. Partridge, Sept. 27th; Lt. R. K. Tailyour, A.F.C., Sept. 28th; Capt. G. M. Turnbull, A.F.C., Sept. 29th; Lt. H C. E. Daggett, Sept. 30th; Lt. G. J. Pilgrim, Oct. 2nd; Lt. G. L. Carter, Oct 7th; Lt F. I. Bradley, Capt. H. T. Horsfield, A.F.C., Lt. G. O. McEntee, Lt. W. A. McMichael, Sec. Lt H B. Morris, Sec. Lt. H. G. Sansom, Oct. 9th; Lt. A. C. Lutyens, M.C., A.F.C.; Sec. Lt. (Hon. Lt.) S. J. R. B. Simmons, Sec. Lt. G. Thomson, Lt. E. W. Trotman, Oct. 10th; Sec. Lt. L. J. V. Bates, Sec. Lt C. S. Hill, Lt. V. A. Peers, Oct. 11th; Lt. J. W. Mullen, Capt. W. Y. Walls, D.F.C., Oct. 12th; Lt. J. M. Brown, Lt. W. J Buchanan, D F.C., Oct. 13th; Lt. J. S. Bradley, Sec. Lt. H. A. St. G Burge, Sec. Lt. R. G. Burton, Lt. L. E. Moutrie, Maj. J. T. Rodwell, O.B.E., Lt. A. A Ross, Sec Lt. C. Sagon, Oct. 14th; Sec. Lt. W. Bellingham, Capt. G. E. Clinton, A.F.C., Lt. A. W. Little, Capt. A. V. Pullan, Sec. Lt. R. Wilkinson, Oct. 15th; Capt. R. Davies, A.F.C., Capt. H. A. H. Leetham, Lt. S. J. Morrell, Sec. Lt. W Mullen, Lt A. W. Phillips, Oct. 16th; Sec. Lt. W. Cougle, Sec. Lt. J. O. McL. Keil, Capt. O. W. Redgate, D F.C., Sec. Lt. W. C. Taylor, Oct. 17th; Lt. C. Chambers, Lt. (Hon. Capt.) F. H. Davies, Sec. Lt. C. E. Durant, Lt. A. F. Ingram, Capt. A. R Penny, M.C., Capt. C. Sutton, Oct. 18th; Sec. Lt. G. R. Biggs, Lt. C. H. Jeffs, Sec. Lt. (Hon. Capt.) L. Wilmot-Johnson, Oct. 19th; Lt. A. H. Birbeck, Lt. A. Copley, Sec-

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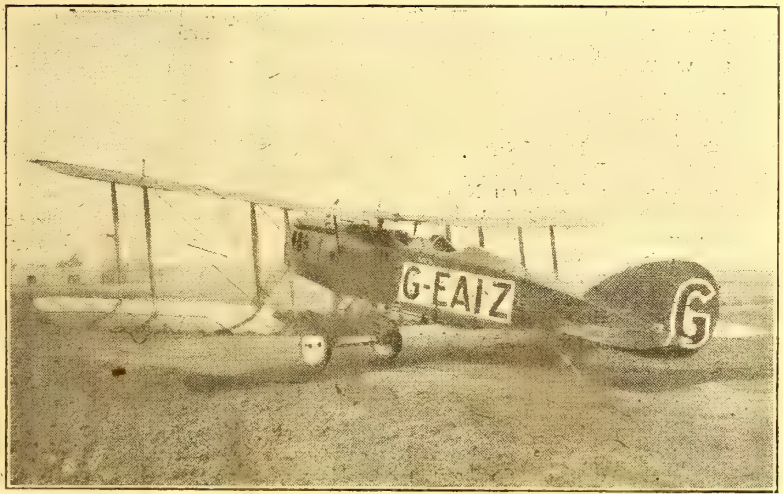

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Lt. (Hon. Lt.) E. Hamilton, Sec. Lt. R. P. Finch, Lt. C. E. Ward, Oct. 20th; Sec. Lt. F. B. Brutnell, Lt S. G. McNaught-Davis, Sec. Lt. (Hon. Lt.) J. C. Montgomery, Sec. Lt. H. D Morley, Lt. A. D. Neish, Maj. G. H. Scott, A.F.C., Sec Lt. R. H. McC. Sheppard, Sec. Lt. (Hon. Lt.) R. M. C. Vaughan, Sec. Lt. J. Whattam, Oct. 21st; Sec Lt. F. J. Bell, Lt. A. H. Cooper, Lt. C. J. L. Harrison, Sec. Lt. L. I. Lowthian, Lt. J. H. Pascoe, Lt. G. S. Peffers, D.F.C., Oct 22nd; Lt. (Hon. Capt.) L. W. Burbidge, D.F.C., Lt. A L. Jones, Lt. O. P. Jones, Sec. Lt. D. J. Stewart, Lt. H. C. W. Strickland, Oct. 23rd; Lt. (Hon. Capt.) J. A. Stanbrook, Oct. 24th; Sec. Lt. W. L Beck, Sec. Lt. P. W. Lingwood, Oct. 25th; Lt. C. J. Venter, D F.C., Nov. 7th.

Maj. L. F. Richard (Capt., Royal R. of Art) relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Sept. 30th.

Capt. P. S. Fisher, D.S.O., D.S.C., relinquishes his commn on account of ill-health caused by wounds and is permitted to retain his rank, Oct. 30th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank:—C. H. P. Hughes, Oct. 20th (substituted for notification in the "Gazette" of June 6th); F. H. Robinson (contracted on active service), J. Thompson (contracted on active service), Oct. 30th; H. R. Utley (caused by wounds), Oct. 31st; R. E. Whittingham (contracted on active service), Nov. 1st; J. A. Nolan, Nov. 2nd (substituted for notification in the "Gazette" of Jan. 14th).

Sec. Lt. W. A. Down relinquishes his commn. on account of ill-health contracted on active service and is permitted to retain his rank, Nov. 4th.

Sec. Lt A. W. Simon (Lt., R. Sussex R.) relinquishes his commn. on account of ill-health, Oct. 30th.

Sec. Lt. G. B. Allen to take rank and precedence as if his appointment as Sec. Lt. bore date March 30th

The rank of Lt. W. C Treen, M.C., D.F.C., D.C.M., is as now described, and not "Sec. Lt." as stated in the "Gazette" of July 4th.

The surname of Lt. C. E. Kendall (Lt , R F.A) is as now described and not "Rendall" as stated in the "Gazette" of May 30th

The notification in the "Gazette" of June 20th concerning Sec. Lt. J. Atkinson is cancelled.

The notification in the "Gazette" of Aug. 5th concerning Sec. Lt. R. C. Williams is cancelled.

The notification in the "Gazette" of Aug. 19th concerning Lt. R. S. Jameson is cancelled.

The notificaton in the "Gazette" of Oct. 10th concerning Lt. A. T. Essex is cancelled.

The notification in the "Gazette" of Oct. 14th concerning Lt. C. W. Wridgway is cancelled ("Gazette of Sept 12th to stand).

The notification in the "Gazette" of Oct. 21st concerning Lt. E. H. Stanes, M.C., is cancelled.

The notifications in the "Gazette" of Oct. 24th concerning Lt. W. S. Campbell and Lt. J. R. Field are cancelled.

ADMINISTRATIVE BRANCH.—Flt. Lt. C. S. McNab to be Flt Lt., from (S.O.), Oct. 1st (substituted for notification in the "Gazette" of Oct. 14th).

Flying Officer J Keyes to be Flying Officer, from (S.O.), Oct. 9th.

Sec. Lt. (Hon. Lt.) B. Attenborough to be Lt., April 2nd, 1918.

Pilot Officer (actg. Flt. Lt.) N. Bucknall relinquishes the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lt., Oct 13th.

Sec. Lt. A. L. Kidd (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., May 3rd (substituted for notification in "Gazette" of July 22nd, wherein this officer was reclassified as Lt. (Ad.), from (O.)).

Transferred to the unempld. list:—Lt G. J. Maunsell, Aug. 21st; Sec. Lt. J. H. Norman, Aug. 25th; Capt C. W. O'Connor, Sept 1st; Lt. R. G. C. Pinfield, Sept. 3rd; Sec. Lt. A. H. Petch, Sept 4th; Lt. J. Pell, M.C., Sept. 11th; Capt. A. Pantin, Sept. 12th; Lt. J Woolfenden, Sept. 15th; Sec. Lt. J. Randall, Sept 18th; Sec Lt S. St. C. Stone, Sept. 23rd; Lt. A. Mitchell, Oct. 8th; Sec. Lt. A. A Mackay, Oct 9th; Sec Lt. D. D. Carcary, Lt G. D Rowden, Lt J. L. Stewart-Moore Capt. W. McI. Watt, M.B.E., Oct. 10th; Lt. J. Sharman, Oct 11th; Sec. Lt. W. H. Bayley, Sec. Lt. (Hon. Lt.) R. S. Cowen, Lt. A Lee, M.B.E., Oct. 12th; Maj. E. W. H. Kennedy, Oct. 13th; Maj R. D. Carey, O.B.E., Oct. 14th; Lt (actg Capt.) J. C. Cantrill, Oct. 16th; Capt. E. P. L. Baker, Oct. 20th; Sec. Lt. H H. Watson, Oct 21st; Lt. W E. J. Roberts, Oct. 22nd; Lt. N. A. Hardie, Lt. J. F. Nalder, Oct. 24th: Lt. (Hon. Capt.) L. F Bettinson, Lt. P. Dalton, Capt. H. C. Mallett, M.B.E., Oct. 26th; Sec. Lt. T Bathurst, Oct. 27th.

Lt. K. H. Leake, M.C. (L.N. Lanc. R.) relinquishes his commn. on account of ill-health caused by wounds, Oct. 25th.

The notification in "Gazette" of Oct. 3rd concerning Sec. Lt. W. L. Wade is cancelled ("Gazette" of Sept. 9th to stand).

The notification in "Gazette" of Jan. 10th concerning Lt. W. T. Jourdan is cancelled.

TECHNICAL BRANCH.—Flt. Lt. (actg. Sqdn. Ldr.) J. Curtis relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., Grade (A.), Oct. 22nd.

Flying Officer (actg. Flt. Lt.) S. J. Gardiner relinquishes the actg. rank of Flt. Lt., on ceasing to be empld. as Flt. Lt., Grade (A.), Oct 6th.

Lt. H. E. K. Eccles, M.C., to be Lt., Grade (A.), from (Ad.), Jan. 11th.

Flying Officer A. F. Lang to be Flying Officer, Grade (A.), from (O.), Oct. 10th.

Sec. Lt. (Hon. Lt.) L. C. Gandy to be Lt., without the pay and allowances of that rank, May 4th, 1918 (substituted for notification in "Gazette" of March 7th).

Sec. Lt. A. E. Wycherley to be Sec. Lt., Grade (B.), from (Ad.), May 1st, and is graded for purposes of pay and allowances as Lt. whilst empld. as Lt., Grade (B.), May 1st.

S. A. Gordon (temp. Sec. Lt., E. Kent R.) is granted a temp. commn. as Sec. Lt., Grade (A.), June 10th, 1918, with seny. from April 1st, 1918 (substituted for notification in "Gazette" of Dec. 13th, 1918, wherein this officer was shown as "Administration").

Transferred to the unempld. list:—Capt. C. M. Alport, May 10th; Sec. Lt. C Parsons, June 10th; Lt. A. H. Dye, June 13th; Lt. G. Osmand, Aug. 23rd; Sec. Lt. W. A. Payne, Sept. 3rd; Lt. C. E. Power, Sept. 9th; Sec. Lt. A. E. Pink, Sept. 10th; Lt. L. C. Pincott, Sept. 11th; Sec. Lt. J. A. Owen, Sec. Lt. A. R. Philcox, Sept. 15th; Sec. Lt. I. Wilson, Sept. 17th; Lt. C. E. North, Sept. 21st; Capt. H. Marsh, Lt. A. E. Young, Oct. 9th, Capt. J. Ree, Oct. 10th; Sec. Lt. E. W. Barton, Lt. C. D. Neale, Oct. 11th; Sec. Lt. C. H. Bell, Lt. G. E. Bower, Lt. H. W. Hire, Sec. Lt. E. W. Taylor, Oct. 12th; Sec. Lt. (actg. Lt.) M. Sheriff, D.C.M., Oct. 13th; Capt. E. L. Dale, Maj. C. P. Hearle, Capt. Sir J. K. D. Mackenzie, Bart., Sec. Lt. W. Parkinson, Capt. L. E. West, Oct. 14th; Sec. Lt. C. J. Beardow, Sec. Lt. S. Bishop, Capt. A. D. MacDonald, Sec. Lt. H. G. C. Plumridge, Sec. Lt. (Hon. Lt.) R. N. Tweedy, Oct. 15th; Sec. Lt. J. T. G. Lord, Capt. J. Morrissey, Capt. W. E. Slingsby, Oct. 16th, Lt. H. A. P. Bale, Sec. Lt. J. A. McDonald, Capt. H. Thompson, Oct. 17th; Capt. J. T. Matthews, Oct. 20th; Capt. A. M. Lester, Oct. 21st; Lt. G. A. Heath, Maj. F. Jolly, O.B.E., Oct. 23rd; Sec. Lt. E. Chesterfield, Oct. 24th; Capt. G. L. H. Douglas-Lane, Oct. 25th; Sec. Lt. G. F. Henderson, Oct. 20th.

Capt. J. McG. Robertson relinquishes his commn. on account of ill-health contracted on active service and is allowed to retain his rank, Oct. 30th

PHYSICAL TRAINING BRANCH.—Lt. J. Butterfield relinquishes his commn. on ceasing to be empld. and is granted the rank of Capt., Sept. 26th.

MEDICAL BRANCH.—Flight Lts. to be Squadron Leaders:—W. A. S. Duck, April 11th; A. E Panter, A. R Sharrod, Oct. 3rd.

Capt. W. B. Loveless, M.C., is transferred to the unempld list, Oct. 12th.

DENTAL BRANCH.—Sec. Lt. (actg. Capt.) G. W. Allen to be Sec. Lt. (from T.), and retains his actg. rank while so empld., June 3rd, 1918 (substituted for notification in the "Gazette" of June 11th, 1918, in which he was shown under "Medical Branch").

WOMEN'S ROYAL AIR FORCE.—Administrator M. N. Thornton reverts temporarily to the rank of Deputy Administrator on ceasing to be empld. as Administrator, Sept. 9th, and to the rank of Assistant Administrator on Oct. 11th, on ceasing to be empld. as Deputy Administrator.

Deputy Administrator H. G. Jack reverts temporarily to the rank of Assistant Administrator on ceasing to be empld. as Deputy Administrator, Oct. 3rd

The following officers relinquish their appointments at their own request:—Deputy Administrators.—N. M. Isaac, Aug. 12th; Mrs. G. L. Purves, Aug. 31st; M. M. McCarthy, Oct. 10th; P. C Barber, Oct. 16th.

Assistant Administrators.—Mrs. M. E. Hill, July 6th; Mrs M. Shields (actg. Dep. Adm.), Aug. 30th; M. H. Fisher, Sept. 23rd; B L. Larson, Sept. 26th; W. M Tyler, Oct. 11th; A. E. Bullivant, Oct. 12th; F. M. Cullen (actg. Dep. Adm.), Oct. 15th.

The following officers relinquish their appointments on completion of service:—Assistant Commandant (I.)—W. E. S. Batten, M.M., M.B.E., Oct. 15th.

Administrators.—M. M. Morgan, Sept 10th; J E. Oswald, Sept. 30th; Mrs. F. M. S. Newton, D.A.C., M.B.E., Oct. 16th.

DEPUTY ADMINISTRATORS.—E V. M. Anderson, Sept. 1st; Mrs. N. G. King, Sept. 19th; M. David, Mrs. J. R. Lawrie, C. T. Milward, Oct. 9th; Mrs. H K. Downer, C J. MacGregor, Oct. 10th; Mrs. E. G. Penman, Mrs. M. Stephenson, Oct. 13th; G. Lawis, W. A. Stapley, Oct. 15th; K. Gilmour, Oct. 17th.

Assistant Administrators.—I. M. C. Clare (actg Dep. Adm.), Sept. 6th; J. L. Wilkinson, Sept. 22nd; E. M. Wells, Sept. 24th; D. I. E. Comber, Oct. 1st; M. A. Condon, Oct 7th; D. M. J. Cochrane-Forster, Oct. 8th; F. P. Buckley (actg. Dep. Adm.), Mrs. E. W. Lloyd-Evans, Oct. 9th; L. M. Burnnand, A. E. Fraser, E Fletcher, H. McKowen, S. J. Tyler, G. M Upham, Oct 10th; Mrs. M. Cookson (actg Adm., D.A.C.), B. A. Turton (actg. Dep. Adm.), Oct. 11th; H L. Chaffers, J. M. Curror, D Robinson, Oct 13th; M. S. Fawcett (actg. Dep. Adm.), E. V. Macdonald, Oct. 14th; M. N. Finlay, F. A Laskie (actg. Adm.), Mrs. A. F Parsons (actg Dep. Adm.), A. Thexton, Oct. 15th; B. O. Brown, A J. Edmunds, E. C. Kenion, Oct 15th; N. H. Frank, L. Hellaby (actg. Dep. Adm.), M. W. Poingdestre, F. D. Turton (actg. Dep. Adm.), Oct. 17th; E. I Morris, Oct 18th; M. C. Cadman (actg. Dep. Adm.), A. D. Chapman, Oct. 19th; E. O'Sullivan (actg. Adm. D.A.C.) Oct. 20th.

MEMORANDA.—The following Probationary Flight Officers are granted Hon. Commns. as Sec. Lts.:—F. C. Champneys, Jan. 13th; W. C. Bettles, Jan. 29th; A. L. Coulson, Feb. 2nd; D. H. Couch, Feb 6th; J. G. Butcher, C. T. Child, Feb. 20th; W. H. Boorne, March 13th; J. V. L. Burder, April 30th; W. I. Beckett, May 15th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—R. E. Barnard, F. Butt, A. Downie, W. J. Southwell, F. G. Wedge, C. J. Whall, Sept. 16th.

Transferred to the unempld. list:—Lt. W. F Duff, from (S.O.), Sept. 27th; Capt. E. P M. Robinson, from (S.O.), Oct. 20th; Sec. Lt. W. Bye, from (S.O.), Oct 26th.

The following relinquish their commns. on account of ill-health:—Lt.-Col. J. D. Markworth, C.B.E. (R.W. Surr. R.), Oct. 24th; Lt.-Col. T. A. Moncton, O.B.E. (contracted on active service), and is permitted to retain his rank, Oct. 30th.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

ELMSLEY—JACKSON.—The engagement is announced between Lieut.-Comdr. Theodore Elmsley, A.F.C., R.N., son of the late Remy and Mrs. Elmsley, of Toronto, Canada, and Joan, only daughter of the late Edward and Mrs. Jackson, of St. Andrews, Fife.

MILITARY.

DEATHS.

BROUNCKER.—Sec. Lieut. Charles Crawford Brouncker, R.A.F. (late London Scottish), who was previously reported missing on Nov. 4th, 1918, is now presumed killed. He was the only son of Mr. and Mrs. Herbert Brouncker, of the Elms, Parkside, Eltham, and Flotsam, Hythe.

WILSON—Lieut. Brodie Wyatt Wilson, 19th London Regt., attached R.A.F., who was previously reported missing on Sept. 23rd, 1918, is now presumed to have been killed on that date. He was the eldest son of the Rev. H. E. and Mrs. Wilson, Little Billing Rectory, Northampton.

AIR FORCE.

DEATH.

STOKES.—Capt. Claud Harry Stokes, D.F.C., R.A.F., who was reported missing on Oct. 29th, is now known to have died on Nov. 7th, 1918. He was the youngest son of Mr. and Mrs. Henry Stokes, 24, Granville Park, Blackheath.

ENGAGEMENTS

ALLEN—JOHNSON.—The engagement is announced between Mr. W. S. Allen, R.A.F., only son of W. Allen and the late Mrs. Allen, of 50, Gloucester Terrace, W.2, and Clara Eleanor, only daughter of the late H. G. Johnson and Mrs. Johnson, of Long Close, Winchester.

BINNIE—HARRIS.—The engagement is announced between Mr. J. A. Weatherhead Binnie, R.A.F., son of Mr. David Dreghorn Binnie and Mrs. Binnie, of Glasgow, and Olave, only daughter of Mr. Campbell Harris and Mrs. Campbell Harris, of Eastbourne.

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THE ROYAL AERO CLUB NOTICES.

"DAILY EXPRESS" £10,000 PRIZE.

A meeting of the Advisory Committee on the "Daily Express" £10,000 Prize was held at the Club on Tuesday, Nov. 4th, 1919, at 3 p.m.

Present:—

Royal Aero Club: Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (in the Chair); Lieut.-Col. F. K. McClean.

Society of British Aircraft Constructors: Capt. P. D. Acland.

Air Ministry: Lieut.-Col. W. O. Raikes.

"Daily Express": Major W. E. G. Murray.

Lieut.-Com. H. E. Perrin (Secretary) (Royal Aero Club).

The main features of the Competition were decided and the drawing-up of the Regulations was referred to the Technical and Competitions Committee.

SPECIAL COMMITTEE MEETING.

A special meeting of the Committee was held on Wednesday, Nov. 5th, 1919, when there were present:—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (in the Chair), Mr. Ernest C. Bucknall, Squadron-Leader T. O'B. Hubbard, M.C., R.A.F., Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie, and the Secretary.

ELECTION OF MEMBERS.—The following New Members were elected:—

Lieut. Harold William Russell Banting.

Cecil Thomas Chandless Chandless.

Geoffrey Kitchin.

John Frederick William Lennard (late Major, R.F.A.).

Arthur Newman (late Capt., R.A.F.).

Flight Lieut. Sydney Gerald Nicholson, R.A.F.

TEMPORARY HONORARY MEMBERSHIP.—Major Melvin Adams Hall, D.S.O. (Air Attaché, American Embassy), was elected a temporary Hon. Member of the Club.

FEDERATION AERONAUTIQUE INTERNATIONALE.—Lieut.-Col. Mervyn O'Gorman attended and presented a report of the Conference of the Fédération Aéronautique Internationale held at Brussels on Oct. 22nd, 23rd, and 24th, 1919.

On the motion of the Chairman, seconded by Mr. Ernest C. Bucknall, a unanimous vote of thanks was passed to the delegates who attended the Conference on behalf of the Club.

PRESENTATION TO SR. JANELLO.—It was decided to make a presentation to Sr. Janello, in recognition of his performance in the Schneider Race at Bournemouth, and the form of the presentation was to be considered at the next meeting of the Committee.

LOG BOOKS FOR PILOTS AND AIRCRAFT.—A letter was read from the Air Ministry asking for a representative of the Royal Aero Club to attend a meeting to discuss the proposed new log-books for pilots and aircraft, and the Secretary was instructed to represent the Club.

FEDERATION AERONAUTIQUE INTERNATIONALE.

REPORT OF THE

CONFERENCE AT BRUSSELS ON OCT. 22ND, 23RD, AND 24TH, 1919.

A Conference of the Fédération Aéronautique Internationale was held at Brussels on Oct. 22nd, 23rd, and 24th, 1919.

In the absence of Prince Roland Bonaparte, who was ill in Paris, M. Jacobs, President of the Aero Club of Belgium, was voted to the Chair.

The following countries were represented at the Conference:—

America, Belgium, Brazil, Denmark, France, Great Britain, Holland, Italy, Japan, Norway, Portugal, Sweden, Switzerland

The delegates who attended on behalf of Great Britain were:—

Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie, Lieut.-Col. Mervyn O'Gorman, C.B., Mr. Harold E. Perrin (Secretary).

The principal business of the Conference was the revision of the Statutes and Regulations of the Fédération.

The revision of the Statutes and Regulations had been under the consideration of a special committee under M. Surcouf. The report of this committee, which was presented to the Conference, had been fully considered by the Royal Aero Club, and the suggestions put forward by the Club were in nearly every case accepted.

As regards the Schneider Cup, the decision of the stewards of the meeting in not awarding the trophy to Italy was upheld. The British delegates, on behalf of the Royal Aero Club, agreed to a suggestion that the race for 1920 should be held in Italy, and, with the sanction of the Aero Club de France, this was approved by the Conference. The Royal Aero Club also agree to loan the Schneider Trophy to the Aero Club of Italy for exhibition on the occasion of the race.

Six Commissions were appointed, viz.:—

1. International Review of the Fédération Aéronautique Internationale. Secretary: M. Blondel la Rougery.
2. Medical. Secretary: Dr. Van Kulften Galthe.
3. Aerial Touring. President: M. Mercanti.
4. Technical. President: Lieut.-Col Mervyn O'Gorman, C.B. Secretary: Lieut.-Col. Alec Ogilvie.
5. Aerological. President: M. Jacobs. Secretary: M. Jaumotte.
6. Aeronautical Laws. President: M. Clunet. Secretary: M. Imbrecq.

The question of international records was fully considered by the Conference and the revised Regulations to take effect on January 1st, 1920, will be issued shortly.

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Secretary.—H. E. Perrin.

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Miss W. Hudson		2	6
Sec. Lieut. C. H. J. Evershed	2	2	0
A. F. Brodie James	5	0	0
Received by Rev. J. R. Walkey for War Charities	2	0	0
George E. Miles		10	6
Royal Air Force Station, Isle of Grain	1	0	0
John S. Gibb	3	0	0
James Hillier	1	0	0
F. E. Simpson	5	5	0
Capt. J. P. Gurdon	5	0	0
J. Entwisle	5	0	0
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Lord Foley	20	0	0
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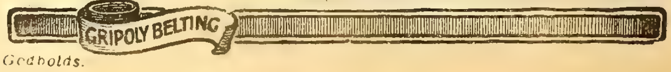

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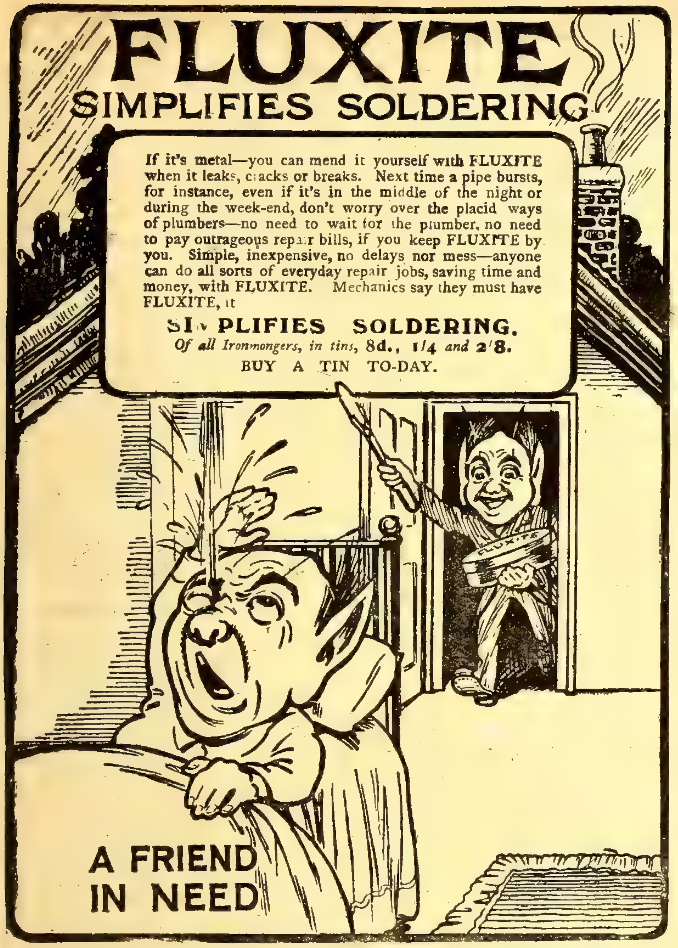

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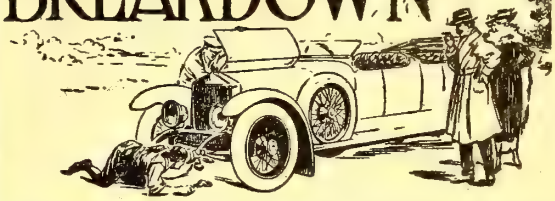

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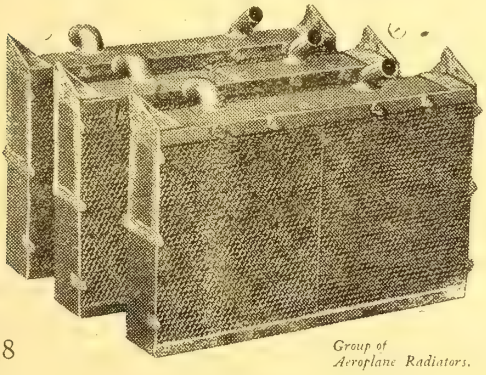

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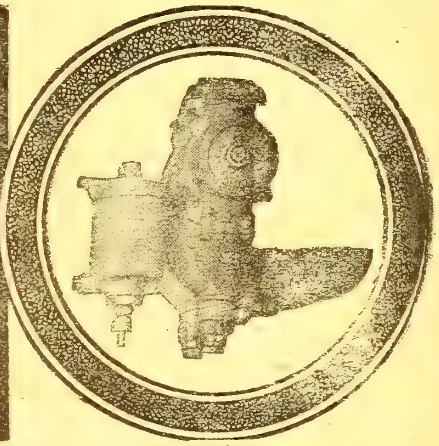

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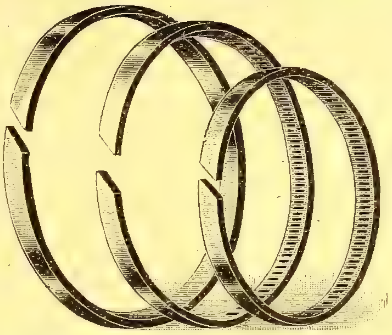

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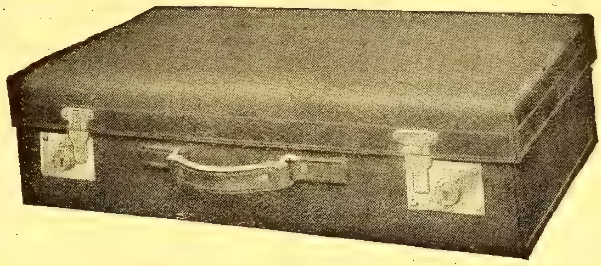

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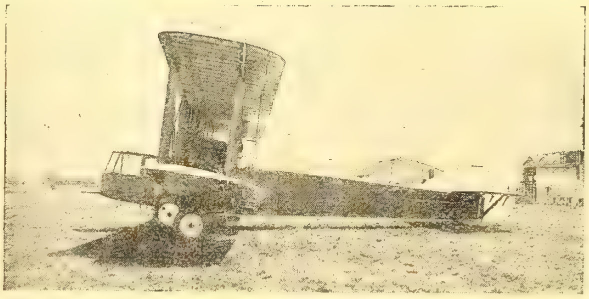

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ON THE DISPOSAL BOARD AND THE S.B.A.C.

It seems very nearly time for somebody in a public position to take an interest in the allegatings of the Aircraft Department of the Disposal Board. One can find no word so well suited to the curious behaviour of that department as the equally curious Irish colloquialism which one has used, a word which implies extraordinary antics which give rise to allegations.

So far as one has been able to find any official reason for the existence of the Disposal Board it exists for the purpose of saving the taxpayers' money by selling surplus war material for the greatest possible sum. Few who have had any dealings with the Board have much belief in its ability to fulfil that function, for its policy, at any rate so far as aircraft are concerned, seems to be to hold out for an absurdly high price until the goods under discussion have been worthless, and then break them up for scrap.

Judging by reports from France published recently in the "Morning Post," this custom is not peculiar to the Aircraft Department, for one reads of tons upon tons of tinned meat, milk, jam, and other edibles being left exposed to the weather until the tins rust through and the contents rot. And all the while the people of France are crying out for cheap food.

Incompetence or Self-Interest.

Such policy, custom, habit, action, or inaction may be due to either of two reasons, firstly to sheer incompetence, or secondly to ill-considered selfishness. In the first case it may be explained by the fact that the few competent people who were originally employed in the Disposal Board have now found adequately paid positions in commercial employment and that consequently only the utter incompetents are left behind. Which is very much as it was during the war when almost all the competent technical people were employed by the aircraft constructors and only the grossly incompetent (with a few brilliant exceptions) were left for the Technical Departments of the Air Board, and afterwards for the Technical Department, Air Group, Ministry of Munitions.

In the second case the explanation seems to be that if all the surplus aircraft and material were sold off at once for a reasonable price all the officials who are now drawing salaries—small in amount, but lavish when judged by results—from the Disposal Board would find themselves cast forth on a cold and unsympathetic world to earn a living. And as most of them are probably painfully cognisant of their own incompetence it is natural, if not honest, that they should keep the surplus stock as long as possible so that the evil day when they find their occupation gone may be postponed to the uttermost limit.

This is poor policy in reality, for by the time the taxpayer is roused to action the Disposal Board will have earned such a bad name that if a man is known to have been employed by the Board it will be impossible for him to get a job anywhere. To have been a Disposal Board official will for a man be several degrees worse than it is for a woman to have been a Whitehall flapper It would be a far better thing to do, so far as these men are concerned, if they resigned *en masse* and became bricklayers' labourers or adopted some equally honest and useful profession.

Some Quaint Aircraft Deals.

The actions of the Disposal Board in relation to aircraft appear to be quaint beyond all measure and entirely without co-ordination.

For instance one hears of quite obsolete but still useful machines being sold at very moderate prices to individual pilots who have done remarkably well with them in single-handed "joy-ride" ventures. In one case a pilot bought a 1915 type machine for a few hundreds of pounds, cleared well over £1,000 in passenger fares, and then sold the machine for about what he gave for it. But against this one hears of a manufacturer who wanted an obsolescent machine for a special purpose in a very great hurry and was forced to pay several thousands of pounds for it. When he got it he found that the engine was unfit for use, though it was sold under a guarantee that it was in perfect flying order. Consequently he had to buy a brand-new engine for it from the makers.

Against this Sweden can buy brand new Brandenburg seaplanes for £200 complete, delivered in Sweden.

It seems that the Disposal Board is holding out for absurdly high prices for all machines which are merely obsolescent, and that even where actually obsolete machines are concerned as soon as there appears to be a demand for them the price is raised so that they become unsaleable.

Yet at the same time as these high prices are being asked for certain machines others of the same make and type are being broken up, or "reduced to produce" as it is called, and sold as firewood and scrap metal. This breaking-up process, incidentally, gives perfectly useless employment to a lot of people who ought to be at work producing something of value.

How "Scrap" Is Made.

One heard recently of a pilot who smashed a certain considerable part of his machine in an accident, and went straight off and bought the whole of that part, plus some more, off a Disposal Board scrap-heap for a few shillings. Yet the part which he had bought had only become scrap through breaking up a perfectly good flyable machine which was worth some hundreds of pounds if sold as a going concern.

Even in the breaking-up process no intelligence whatever seems to be shown. For example, a petrol tank out of an aeroplane is always a receptacle which will hold liquid and could be sold as such, either for use in motor-boats, or for storing petrol or oil in garages, or for holding the domestic paraffin supplies in houses in the country. Thousands could be sold through local ironmongers and garages.

Yet no attempt seems to be made to sell them in this way. When they are taken out of the machines they are hammered out of shape to make sure that they cannot be used. And so tanks which cost pounds to make—apart from the price paid for them by the Ministry of Munitions—are sold for a few pence as scrap tin or brass or aluminium.

The Waste of Power-Plants.

Engines are treated in a similarly imbecile way, and as the cost of an engine was so high the scandalous waste is far greater. If the maker or owner of an aeroplane wants to buy a first-class engine, such as a 1916 or 1917 Rolls-Royce, or any other engine of fairly modern type, he is asked to pay a price which is very nearly as high as the maker's list price for the very newest type.

Naturally the sales at such prices are very small indeed, and so the engines are left in store to become more and more obsolete. In many cases they are badly housed and rust is eating into the valves, springs, water-jackets, and other parts, with the result that in a year or so it will cost as much to overhaul these engines and to replace the deteriorated parts as it will to buy new engines.

In other cases, where the officials of the Disposal Board have made up their minds that certain types of engines are obsolete, instead of selling the engines at a "job lot" price so that they can be adapted to some useful purpose, such as driving motor-boats, or driving dynamos for lighting country houses, or even for use on slow, low-powered aeroplanes, the engines are condemned to be broken up with hammers and sold as scrap metal.

One heard not long ago of an astute person who bought several such engines at a matter of ten or fifteen pounds apiece as scrap metal, plus a couple of pounds per engine to the gentlemen who were supposed to break them up for the courtesy of missing them with their hammers in the breaking-up process.

All sorts of other valuable parts of aircraft seem to be treated in the same way. Seaplane floats, which would do excellently for replacements, are stove in and sold as firewood. It is said that flying-boat hulls of the older types, which would make quite good pleasure craft on lakes and big rivers here and abroad, though perhaps unfit for sea work, are similarly broken to pieces.

The whole business seems to be managed with the idea of selling as little as possible and making what is not sold unfit for use. Though one admits that intelligent officials here and there are proving themselves to be first-class salesmen.

Our Priceless Opportunity.

If nothing more than mere waste were involved in this astonishing policy it would be bad enough. But far worse than the mere waste of money and material is the loss of the priceless opportunity which exists at the moment for pushing forward the progress of Civil Aviation and for getting a footing in foreign countries with British aeroplanes. Surely it is the duty of the Society of British Aircraft Constructors to step in and stop the waste, and to convert all this surplus war material into useful propaganda.

Almost all the obsolete and obsolescent machines and engines are quite fit to fly. Therefore, why not fly them? Especially should they be flown abroad, where less is known about the fast and comfortable modern machines of to-day than is know elsewhere.

Fields for Enterprise.

Australia and South Africa, as is well known, are keen on starting "joy-rides" and regular air lines. Already small private ventures, equipped with such ancient craft as D.H.6s and B.E.2es, are at work and doing well. Why not send them dozens of somewhat newer and better machines and sell them cheap? There are hundreds of pilots in each country, and thousands of mechanics.

Canada has some ten or twelve thousand pilots, nearly all of whom are keen on flying if they can get machines at a price. Ancient Curtisses with 90 h.p. engines are being planted on them by Americans or pseudo-Canadians. Why not let them have D.H.4s, R.E.8s, Sopwith "1½ strutters," Avros, and other less antiquated types, at a price? It would be better than scrapping such machines.

Also, Canada is a mass of water ways. One can travel from Halifax, Nova Scotia, to the foot-hills of the Rockies and to Hudson's Bay in a seaplane or flying-boat and never be out of gliding distance of a safe alighting place on water. Why not send flying-boats and seaplanes to Canada?

The Argentine Republic is made for flying. Its great plains and rivers afford perfect conditions for thousands of miles. The Argentinos are rolling in wealth, and they have been infected with a love of flying by French and Italian aeronautical missions which have visited them since the Armistice, while we have been represented by about two British machines and pilots. Can we not send some of our modern surplus machines to Argentina instead of leaving them to rot?

Is there nobody in the S.B.A.C. who has enough influence with financial people in the City to find the money to buy up a few tens of thousands of pounds worth of surplus aeroplanes from the Disposal Board and send them with a few capable business men and squads of mechanics to these and other countries which are crying out for aviation? Or is it that the S.B.A.C. does not want the surplus stock sold and would rather see it rot away at the cost of millions of pounds to the country?

A Question to the S.B.A.C.

Some people believe that such is the case. One has been told that the prevailing idea among the aircraft firms in the S.B.A.C. is to prevent obsolete and obsolescent machines from being sold cheap, for fear lest they should spoil the market for modern machines at the high prices made necessary by labour conditions to-day. It is even said that the apparently imbecile policy of the Disposal Board in holding out for absurdly high prices and scrapping usable material is to a large extent due to an understanding with the S.B.A.C.

One has too much respect for the business acumen of the leading men in the S.B.A.C. to believe that such is the policy of the Society, but it would be well if the Council of the Society were to investigate the facts and discover whether any of its members are instigating this policy in the Disposal Board. Will the Council do so, and make an official announcement accordingly?

Propagating Civil Aviation.

Surely it must be evident that the best way of propagating Civil Aviation is to make it popular first. This can best be done by making it as cheap as possible at the beginning. High prices will come later.

One has seen personally from their beginnings the rise of three great industries, the Cycle Industry, the Motor Industry, and the Aircraft Industry. History has repeated itself in every case. Invariably there has been an attempt to maintain high prices artificially, and equally invariably the highest prices and the greatest boom has been reached when there was the greatest supply of cheap machines. The bigger the sale of cheap machines the bigger the sale of high-priced machines. Which is quite natural.

The Progress of Prices.

The youth who has a cheap bicycle wants a better one. Then he wants a motor bicycle. When he has got that—and a little more money—he wants a side-car, and then the eternal feminine comes into the question, which always means more expense.

After the side-car comes a cycle-car. That is followed by a "ten-twelve" or a "twelve-fifteen" two or three seater. After a while the light car becomes a bore and he wants more solidity and more speed, and acquires an "eighteen-twenty-two," with a sporting four-seater body. And finally, if the money can be got, he gets to the "twenty-eight-eighty" class and a saloon body.

Or he starts with a Ford and graduates to a Napier, or Rolls-Royce, or Sunbeam, or Siddeley. Yet is anybody foolish enough to believe that the astounding sale of Fords affects the sale of the more expensive cars adversely? Does it not, on the contrary, very much extend the sale of higher-priced cars, simply because the man with money cannot afford to be seen in a cheap car, and because the man with a cheap car always wants a more expensive one?

Similarly in aviation, the half-guinea "joy-ride" at Blackpool becomes the cross-country "stunt" from Blackpool to Manchester or *vice versa.* The short cross-country trip becomes the adventure of an aerial journey to Paris or Brussels or Amsterdam. The adventure becomes in time a habit, and so we shall develop the passenger air lines of the future to Berlin and Petersburg, Rome and Cairo, Bordeaux and Madrid, and ultimately to India, Australia, and the Cape. But it will be the half-guinea joy-ride which has educated the passengers on those lines.

Price as an Educator.

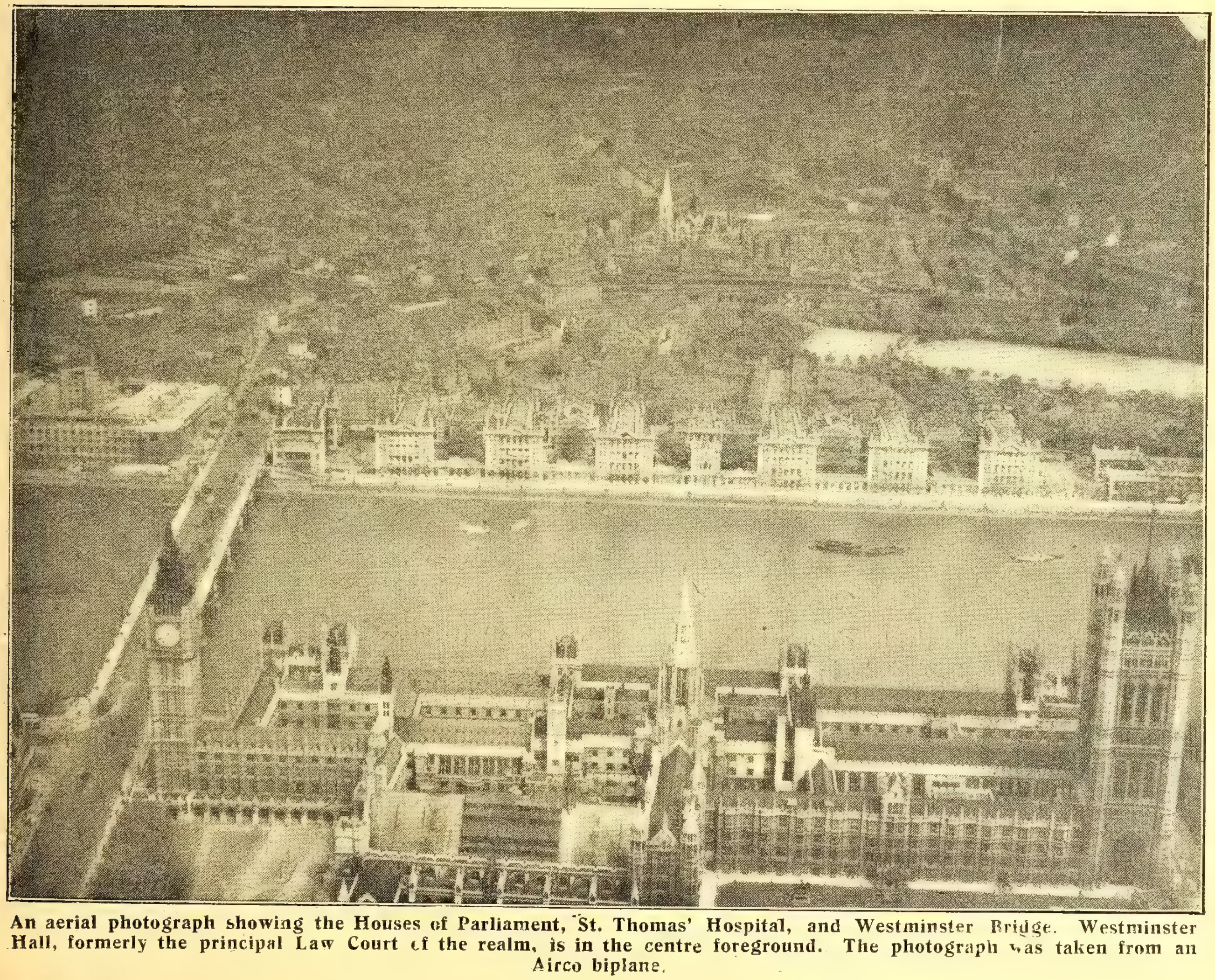
Just in the same way the cheap aeroplane will, if given the chance, educate the buyer of the bigger and better machines. The Canadian sportsman who buys an obsolescent F.B.A. or N.T. boat and finds it a useful as well as an amusing way of travelling about his country will ultimately buy the latest product of the Gosport, or Saunders, or May, Harden and May boatyards. The inspector or trader who uses Disposal Board seaplanes for journeys on the Canadian rivers will at a later stage use the latest Faireys and Shorts. The Australian sheep farmer, the Argentine *ranchero,* or the Canadian corn or cattle man who starts inspecting his out-stations on a B.E.2e or a D.H.6 will soon want the latest thing in Aircos, Avros, Blackburns, Martinsydes, Sopwiths, or what-not.

The men (as usual embracing women) are there and the money is there waiting to buy aeroplanes—at a price—if only somebody will set about selling them in the right way. The aeroplanes in thousands are ready for sale.

A Business Proposition.

If the S.B.A.C. is wise it will form a huge co-operative selling organisation to plant all the Disposal Board's surplus aeroplanes all over the world, irrespective of make and at the lowest possible price. Then and then only will Civil Aviation propaganda be propagated as they should be. All the Air Ministry's well-meant propaganda are so much waste paper unless based on accomplishments.

The only aerial propaganda worth having are those which are demonstrated by aeroplanes in being. Between now and next March is the time for organisation. It is to be hoped that next year will see the British Aircraft Industry convincing the world of its ability to supply all the aircraft needed at prices which make flying possible.—C. G. G.



An aerial photograph showing the Houses of Parliament, St. Thomas' Hospital, and Westminster Bridge. Westminster Hall, formerly the principal Law Court of the realm, is in the centre foreground. The photograph was taken from an Airco biplane.

REFLECTIONS ON THE MOTOR SHOW.

Except for that body of enthusiastic amateurs whose automobile tinkering habits provide a large portion of the motor trade with the wherewithal to pay super-tax, and whose activities are the means of keeping the cost of motoring at a level well beyond the means of those to whom motoring could be of real use, no one nowadays pays much attention to the motor Press.

However, its bright burblings provide a fund of constant amusement, and its insistence on the influence which aircraft practice has had on the design of automobiles has seemed to call for an investigation, for which the present show at Olympia has afforded an opportunity, though a very uncomfortable one.

Nevertheless, at show time, the motor trade does abandon some of its habitual discourtesy to those of an inquiring turn of mind but of limited purse, and thus the honest poor may then occasionally discover the truth undisturbed by violence, either physical or verbal.

Be it at once confessed the motor Press has in this matter of aircraft influence on design founded its statements on fact.

There can be no doubt that one well-known aero-engine has distinctly influenced the designs of that firm, which, having made that engine in quantity during the war, has now planted a speaking likeness of it into a chassis by way of producing their 1920 model. But, with a few honourable exceptions, aero-engine practice seems to have had its greatest influence on the designs of the advertising departments of the motor trade, which, perhaps, is where most of its designing is done.

Overhead valves, overhead camshafts, wonderful pistons of costly and fragile construction, and a lavish use of aluminium—all excusable enough in an engine which has to develop one steady horse-power for every three pounds of weight—are here employed to advertise engines which may occasionally develop one horse-power for every eight pounds during some very small fraction of their working life, with no discernible reason other than that of assisting in the transference of cash from the pockets of the ignorant to the coffers of the motor manufacturers. And one joyfully shakes the dust of Olympia from off one's hat with the comforting reflection that, whatever befall British Industry in the future, our luxury toy trade is safe in the hands of the motor makers.

However, amongst the glittering mass of nickel-plated muckings attached to what, five years ago, might have been useful vehicles, there are some signs that one or two designers have used their brains and have realised that, when this era of promises has departed, when the Government pays in cash and the motor broker delivers in kind, and the world has again settled down to the harmless but necessary task of earning its living, the British motor-car will have to establish itself as an economically justifiable method of transport, or else depart to the limbo of the might-have-beens.

Amongst the cases wherein aeronautical practice has been applied with intelligence to the improvement and simplification of the automobile, the greatest interest attaches to the three entirely novel air-cooled light cars—the A.B.C., the Enfield-Allday, and the C.A.R., better known among aviators as the Cosmos.

In the matter of air-cooling, the experience of the last few years with regard to aero-engines may fitly and properly be applied to the design of automobile engines, since air-cooling offers at once a simpler, lighter, and cheaper engine, and in nowise necessarily entails either an unduly fragile or an unduly intricate construction.

In so far as engines are concerned, both the A.B.C. and the C.A.R. are based on the experience of their designers with aero-engines of generally similar type, and in both instances the car engine appears to be a simplified edition of the aero-engine types associated with the same name.

The A.B.C. resembles in lay-out and general appearance the 40-h.p. Gnat 2-cylinder aero-engine, with cylinders of reduced bore and stroke, fitted with detachable cast-iron heads instead of being machined from solid steel, and with two valves per cylinder instead of the Gnat's three.

In the C.A.R. engine the three cylinders are also fitted with detachable heads instead of the one piece construction. The aluminium head-plaster—which forms the valve stem guides and ports and serves to dissipate heat from the cylinder tops—the distinguishing feature of the Cosmos aero-engine is naturally preserved.

In the case of the Enfield Allday, simplicity is less in evidence. Five cylinders, together with ten valves of a novel and, one would imagine, rather expensive type, seems an unnecessarily ample allowance for an engine rated at 10 h.p., and almost certainly never called upon to deliver more than 25 b.h.p., particularly when it is considered that the cooling arrangements employed for the cylinders are those hitherto found necessary only in engines of the cylinder-in-line type developing nearly 10 h.p. per cylinder.

Nevertheless, this car does show originality in design, and in comparison with the great majority of cars it is relatively simple and free from gadgets, and its designer may be congratulated upon having produced a very effective compromise which provides the maximum of talking points with the minimum of complication.

Amongst the cars of more orthodox design which are manufactured by British firms with aero-engine experience there is a noticeable tendency to make intelligent use of that experience while refraining from talking overmuch about the fact. A notable exception is the Rolls-Royce, wherein, as far as can be gathered, no change in design has been found necessary in the power plant. This seems not unnatural, as the Rolls-Royce is now, and ever has been, equipped with an engine intended to develop a steady high power without effort, and without any of those characteristics of an intensive use of materials and the accompanying shortness of life which necessarily characterise the aero-engine.

A case where a designer with successful experience of aero-engine design has applied himself to producing a high-grade car engine in the light of that experience is the Napier. The value of aluminium as a material for cylinder block castings, owing to the excellent heat conductivity of this material and the improved cooling which can thus be effected, has been amply demonstrated in aero practice, and the extension of the habit to automobile engineering is a legitimate one. In the Napier six-cylinder engine the cylinder block and the upper half of the crankcase are cast in one piece, with detachable heads carrying the overhead valve gear bolted thereto. Not only the engine but the whole chassis has the appearance of a thoroughly sound engineering job, and the finish throughout is of the highest class.

Mr. Louis Coatalen is, of course, one of those who were most busily employed upon the design of aircraft engines during the late war, and an inspection of the power units of both the 16 and the 24 h.p. Sunbeam rather leads one to suppose that he has turned with a sigh of relief to the production of the relatively simple and satisfactory automobile engine after his wrestlings to satisfy the demands of aero-engine "experts." When the present phase has passed, doubtless most car designers will follow his example and make engines to suit car conditions rather than to ape their aerial cousins.

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Wm. Beardmore & Co., Ltd., another of the firms who have designed aircraft engines which really pulled their weight, show in their car-engine design that a competent engineer can apply the experiences of one craft to the exigencies of another otherwise than by merely continuing the conventions of the first, and thus, though doubtless aero-engine experience has had its due effect, their car engine bears less outward resemblance to any known aero-engine than do the products of many makers who have not only never built such an engine, but could not if they tried.

And so with practically every firm which really has any aero-engine experience behind it. They have learnt about engines from aero-engines, and their car engines are doubtless the better for it; but they are car engines and not emasculated aero-engines.

Thus even the trade papers can only accuse one of three Wolseley models of showing "direct evidence of aero-engine influence," and that merely on the strength of its possessing overhead valves and camshafts.

Again the magnificent Armstrong-Siddeley chassis is equipped with an engine bearing much less outward resemblance to the Siddeley "Puma" aero-engine than does one not distant neighbour emanating from a firm unheard of in the world of aeronautics; but one may feel certain that the Armstrong-Siddeley engine embodies the essential of good engine practice to a considerably more useful effect.

On the whole, the show is a depressing affair, and serves still more to accentuate the idea that, far from settling down steadily to useful work, Britain is sinking still deeper into habits of luxury and sloth. The contrast between British cars and those of foreign origin does not ameliorate the impression. Class for class, the foreign cars show cleaner and simpler design, better workmanship, and a markedly smaller amount of that expensive and utterly useless eye-wash so dear to the British motor-car trader, and so prohibitive to the would-be user of his products.

W. H. S.

THE RESIGNATION OF MAJOR-GEN. J. E. B. SEELY, C.B.

The reasons given by Major-General J. E. B. Seely for his resignation of the appointment of Under Secretary of State for the Air are to be found in the reports of the proceedings in Parliament printed on page 1758.

THE SALVAGE OF AIRCRAFT.

A section dealing with the salvage of aircraft at sea is to be introduced in the Air Navigation Bill. This is a result of discussions between the Fisheries Division of the Board of Agriculture and the Air Ministry.

Aircraft on the water are to be regarded as shipping for salvage purposes. When in need of assistance aircraft are to become "wrecks" within the meaning of the Merchant Shipping Act.

It has been decided to send the first case of salvage of civil aircraft for test to the courts in order to get the law settled.

THE FEDERATION AERONAUTIQUE INTERNATIONALE.

The statutory conference of the Federation Aeronautique Internationale was held at Brussels on Oct. 22nd, 23rd, and 24th. In the absence through indisposition of H.I.H. Prince Roland Bonaparte, the President of the F.A.I., M. Jacobs, the Vice-President, who is President of the Aéro Club de Belgique, was appointed chairman. The following countries sent rerpesentatives: Belgium, Denmark, France, Great Britain, Italy, Japan, the Netherlands, Norway, Switzerland, Sweden, and the United States of America.

M. Surcouf, one of the French representatives, was appointed reporter to the conference. A Belgian should normally have been appointed to this office, but in view of the hostile occupation of Belgium during the war it was felt that Belgians were not so fully informed in aeronautics as were representatives of other countries less directly affected by the war.

It was decided by vote that requests and information for enemy countries should be supplied officially.

The draft for the revision of the Statutes of the Federation prepared by M. Surcouf under instructions issued in Paris in May, 1919, was read. There are 31 articles of the statutes and 200 articles of regulations.

Under Article 6, Paris was selected as the permanent seat of the F.A.I. No nation can be represented by more than six delegates, exclusive of secretarial staffs and delegates to special commissions.

In the discussion on Articles 14 and 15 the questions of votes and of national payments to the general fund were decided. The financial charges are to be as follows: half the budget will be paid in equal shares from each affiliated country, and the remaining half will be made up of sums proportional to the number of votes allotted to the respective subscribing nations.

After a long argument, during which both the British delegation and that from the Netherlands threatened to withdraw from the conference, it was decided that nations already in the F.A.I. should have votes proportional to their aeronautical importance, and that newly admitted nations should have one vote each. The first allocation of votes was as follows: France, Great Britain, Italy, and U.S.A., 4 votes; Belgium, 3 votes; Argentina, Brazil, Denmark, Egypt, Holland, Japan, Norway, Portugal, Russia, Spain, Sweden, and Switzerland, 2 votes, and Uruguay, 1 vote. The subvention per vote was laid down at 900 francs.

In the matter of regulations the altitude record will in future not be granted to any claimant who has not beaten the previous holder's record by 100 metres. Heights will in all cases be calculated from sea-level. The landing must in all cases be made at the point of departure.

Speed records will in future be contested for over a kilometre course by a flight in each direction at a height of 50 metres. New records must exceed preceding records by at least four kilometres per hour.

No records will in future be granted for flights with passengers. They are to be replaced by records made with useful loads.

All "feminine" records are abolished.

A new category of aeroplane—the aviette—is recognised by the F.A.I.

The decision of Great Britain in regard to the Schneider Cup was upheld, but at the request of the British delegation it was decided that Italy should organise the Cup Race for next year and hold it over Italian waters.

The Gordon Bennett Cup for spherical balloons, which has been uncontested since 1913, will be open to competition in the United States during 1920.

The United States was informed that the competitors in the New York-Toronto race have been disqualified, as the race was not held under F.A.I. regulations.

The Committee of the F.A.I. for 1920 is composed as follows: President, H.I.H. Prince Roland Bonaparte; Vice-Presidents, M. Fernand Jacobs (Belgium), M. le Comte Henri de la Vaulx (France), Colonel Montu (Italy), Major-General Holden (Great Britain), Mr. Frank Lahm (U.S.A.); Secretary General, M. Paul Tissandier (France); Treasurer, M. Georges Besançon (France).

The next conference will be held at either Geneva or Berne.

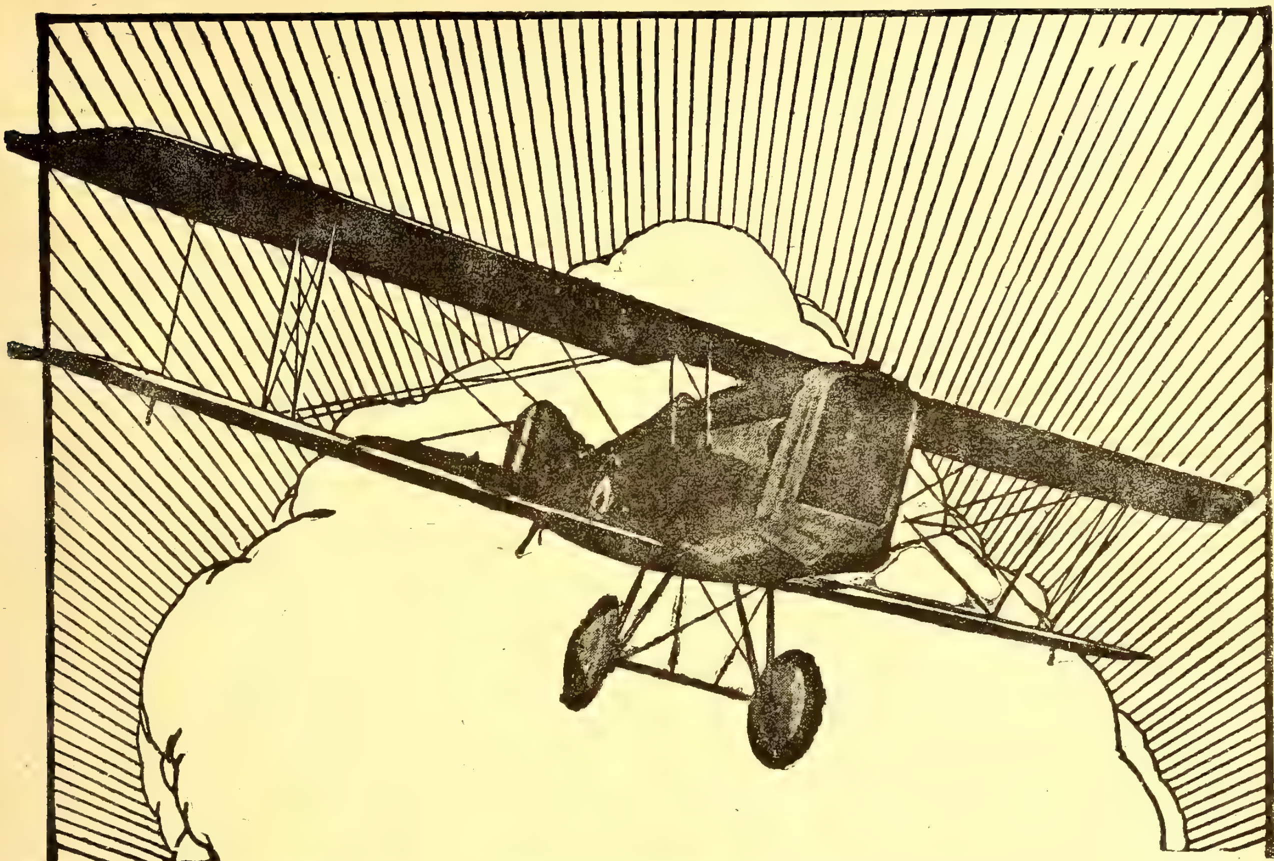
WIRELESS.

The next General Meeting of the Wireless Society of London has been arranged to take place at the Institution of Civil Engineers, Gt. George Street, Westminster, on Wednesday, Nov. 26th, at 6 p.m. After the business of the meeting, Mr. J. Scott-Taggart, M.C., A.M.I., R.E., will read a paper on "A System for the Reception of Continuous Waves," after which the meeting will be open for discussion. Mr. Scott-Taggart (who has already contributed to the columns of scientific papers and journals on themionic valves) is head of the Valve Department of Ediswan, Ltd., and members and visitors may be assured of hearing something of real interest.

The Secretary of the Wireless Society, Mr. Leslie McMichael, notifies his change of address to 32, Quex Road, W. Hampstead, and all communications with regard to the Society should be so addressed after Nov. 23rd.

A PELMANIST AMONG THE BOLSHEVIKS.

Lieut.-Colonel Cecil L'Estrange Malone, M.P., late R.A.F., whose entry into Parliament shortly after the completion of a course in Pelmanism aroused a certain degree of interest some months ago, has it appears, been on a visit to the central seat of Bolshevik disorder. He visited Moscow and Petrograd, and was honoured by an audience with M. Trotsky, one of the leading exponents of modern murder methods. He has been writing a series of articles on the things and incidents seen by him. Bolshevism and Communism clearly have attracted him. He wanted "to learn," and he is now giving the British Public the benefit of his lessons. It will be interesting to follow his public career.



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NAVAL & MILITARY AERONAUTICS

[The Official "Gazettes" and Personal Notices will be found on page 1760.]

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

Buckingham Palace, Nov. 12th.

Major-General the Right Hon. J. E. B. Seely, M.P., was received in audience by His Majesty upon his resignation as Under-Secretary of State for Air.

Buckingham Palace, Nov. 13th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of The King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

The Most Distinguished Order of Saint Michael and St. George.—Companion.—Lieut.-Col. Ronald Waterhouse, R.A.F.

The Distinguished Service Order.—Capt. Robert Steele, R.A.F.

The Most Excellent Order of the British Empire.—Officers.—Military Division.—Major James Cooper, R.A.F., Squadron Leader Vincent Richmond, R.A.F., and Major Jack Stewart, late R.A.F

Member.—Military Division.—Flight Lieut. Edward Trist, R.A.F.

The King then conferred decorations as follows :—

The Distinguished Flying Cross and the Air Force Cross.—Squadron Leader Frederick Baker, R.A.F

The Distinguished Flying Cross.—Major Charles Mackay, R.A.F., Flight Lieut. Francis Halsted, R.A.F., Capt. Leonard Baker, R.A.F., Flying Officer William Bentley, R.A.F., Capt. Thomas French, R.A.F., Lieut. Harold Gard, R.A.F., Flying Officer Lloyd Mason, R.A.F., Lieut. Frank Noble, R.A.F., Lieut. Ernest Whyte, R.A.F., Sec. Lieut. Cyril Ambler, R.A.F., Pilot Officer Gerard Kannemeyer, R.A.F., Sec. Lieut. John Moorhouse, R.A.F., and Sec. Lieut. George Thomson, R.A.F.

The Air Force Cross.—Wing Comdr. Dermott Allen, R.A.F., Lieut.-Col. Stanley Bell, R.A.F., Wing Comdr. Robert Ross, R.A.F., Major William Aplin, R.A.F., Capt. Gordon Alchin, R.A.F., Flight Lieut. Valentine Baker, R.A.F., Flight Lieut. Alfred Blake, R.A.F., Flight Lieut. Norman Bottomley, R.A.F., Capt John Henry, R.A.F., Capt. Cedric Jones, R.A.F., Lieut. Edward Ackery, R.A.F., Flying Officer Bertie Brice, R.A.F., Lieut. Walter Bruce, R.A.F., and Lieut. Herbert Vineberg, R.A.F.

Buckingham Palace, Nov. 15th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of His Majesty, when The King invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

The Most Honourable Order of the Bath (Military Division), the Most Distinguished Order of St. Michael and St. George, and the Distinguished Service Order.—Companion.—Air-Commodore Henry Brooke-Popham, R.A.F. (also received the Air Force Cross).

The Most Distinguished Order of St. Michael and St. George.—Companion.—Group Capt. Amyas Borton, R.A.F. (also received the Air Force Cross).

The Most Excellent Order of the British Empire.—Commander.—Military Division.—Lieut.-Col Frederick Cleaver, R A.F.

The Distinguished Service Order, the Military Cross, and the Distinguished Flying Cross and Bar.—Flight Lieut. Falcon Hazell, R.A.F.

The Distinguished Service Order and the Military Cross.—Wing Commander Helperus Van Ryneveld, R.A.F.

The Most Excellent Order of the British Empire.—Officers.—Military Division.—Major Allan Bridgeman, late R.A.F.; Major Charles Krabbe, R.A.F.; Major Clarence Krabbe, R.A.F., and Capt. Alexander Cassy, R.A.F. (also received the Air Force Cross).

Members.—Military Division.—Aileen, Mrs. Rathbun, W.R.A.F.; Flying Officer Kenneth Meek, R.A.F., and Pilot Officer John Adams, R.A.F..

His Majesty then conferred decorations as follows :—

The Military Cross and the Air Force Cross.—Capt. Frederic Bates, R.A.F., and Capt Douglas Brooks, R A.F.

The Military Cross.—Flight Lieutenant Alister Bolton, R.A.F.; Flying Officer Frank Farrington, R.A.F.; Lieut. Anthony Harrison, R.A.F.; Lieut. Louis Murphy (R. Irish R.), attd. R.A.F.

The Distinguished Flying Cross and Bar.—Capt. Edgar McCloughry, R.A.F.

The Distinguished Flying Cross.—Major Arthur Barker, R.A.F.; Squadron Leader Robert Leckie, R.A.F.; Capt. Norman Bolton, R.A.F.; Capt. Edward Crundall, R.A.F., Flight Lieut. Frederick Hudson, R.A.F.; Flying Officer George Blake, R.A.F. (also received the Distinguished Conduct Medal); Flying Officer Roger Blake, R.A.F.; Lieut. Ralph Bolton, R.A.F.; Lieut. William Bottrill (Canadian Infantry), attd. R.A.F.; Flying Officer Walter Brind, R.A.F.; Lieut. Cyril Leeke, R.A.F.; Flying Officer Stanley Sharpe, R.A.F.; Flying Officer Frank Woolley, R.A.F., and Pilot Officer Samuel Brabner, R.A.F.

The Air Force Cross.—Lieut.-Comdr. Ennis Chambers, R.N.; Capt. Cyril Carleton, R.A.F.; Flight Lieutenant Leslie Clarke, R.A.F.; Flight Lieut. Wilfred Cox, R.A.F.; Capt. Norman Fraser, R.A.F.; Capt. Albert Henshaw, R.A.F.; Capt. John Stocks, R.A.F.; Flying Officer William Catchpole, R.A.F., and Flying Officer Douglas Chapman, R.A.F.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made :—

Nov. 15th.—Payr. Lt. (Hon. Capt., R.A.F.).—K. B. S. Greig, to rank of Payr Lt.-Comr., seny Nov. 14th.

Nov. 17th.—Gunner.—C. J. Remfry, to "Pegasus" (Nov.15th); and (on commg.).

Naval Intelligence.

H.M.S. "Eagle," the aircraft-carrier, will shortly be taken from the Tyne to Portsmouth Dockyard in order to be completed for sea. Up to Sept. 30th, the latest date for which figures are available, the total expenditure incurred on the construction of "Eagle" was £2,199,358, including £1,334,358 paid to the Chilean Government in respect of work done for them before the vessel, which was originally to be the battleship "Almirante Cochrane," was taken over by the Admiralty.

It is understood that Capt. W. S. Nicholson, C.B., at present commanding "Furious," has been selected to command "Eagle." It was originally intended to launch "Eagle" last August.

H.M.S. "Furious," aircraft-carrier, will be reduced to the Reserve complement at Rosyth on Nov. 21st.

It is now announced that trials have been recently successfully carried out with a new type of torpedo-plane. The machines are said to have two 15-in torpedoes each, which is another proof that the British Navy is beginning to realise the importance of aircraft.

MILITARY.

The Afghanistan Affair.

It was recently reported that when Major-General Climo presented the Peace Terms to the Mahsuds at Khirgi on Nov. 4th, three British aeroplanes were flying overhead as a reminder of the British threat of air raids if the terms were refused.

The British terms were announced to the representatives of the Northern Wazari tribes at Miranshah on Nov. 9th. Aeroplanes again taking part in the ceremony as they did at Khirgi. These machines had previously dropped leaflets, over the surrounding country, advising the tribesmen to remove their women and children, as the bombing operations would begin almost immediately should the terms be refused. Even so, the Wazaris were given until Nov. 17 th to decide.

AIR FORCE.

BOY MECHANICS FOR THE ROYAL AIR FORCE.

The Air Ministry has recently instituted a new scheme to secure the entry of well-educated boys for a systematic Course of Training as skilled craftsmen for service with the Royal Air Force.

Under this scheme, boys will be entered between the ages of 15 and 16 years for a period of 10 years' colour service followed by two years' service in the Reserve. During the first three years they will undergo a course of Educational and Workshop training, at the end of which those who have passed the requisite tests will be promoted forthwith to the rank of Leading Aircraftsmen in one or other of the skilled trades.

To give scope to the more capable and ambitious boys, and to ensure that the Air Force shall secure the full benefit of their ability, a certain number of those who show most promise during their training will be chosen for an additional six months' course of higher instruction, being promoted at once to the rank of Corporal. From among these, some may be selected for the grant of a commission, and will proceed to the Cadet College for training as Flying Officers with the Cadets entered by open competition.

There will also be opportunities for promotion to a Commission at a later stage to those who show their suitability during their service in the ranks.

In order that the opportunity of competing for entry into the Royal Air Force under these conditions may be brought within reach of the largest possible number of boys, two distinct methods of admission are being arranged: (1) Open competitive examinations, (2) Examinations limited to candidates nominated as in every way suitable by the local Education Authority of their district. A limited number of candidates with Service claims may also be admitted on the nomination of the Air Council subject to their passing a qualifying test only.

The first examination under the scheme will be one for boys nominated by their Local Education Authority, and will take place in December. Full particulars in regard to the arrangements of the grant of nominations for this examination have been circulated to the Local Education Authorities throughout the country, many of whom have already promised their support. As nominations must reach the Air Ministry not later than November 22nd, prospective candidates should communicate with their Local Education Authority without delay. Boys who are successful in this examination will enter the Training Centre early in February, 1920.

During the war it was not possible to give enlisted boys more than a few months' training, neither was it feasible to confine the entry only to boys of sufficient intellectual attainments to ensure that they would benefit by a long apprenticeship in R.A.F. technical trades.

The scheme which forms the subject of this communiqué constitutes an entire departure from the methods imposed by war conditions, and is designed to meet the requirements of the R.A.F. as organised on a permanent basis

Training Centres are consequently being reorganised to deal with this new entry, and the machinery of education, both general and vocational, is being largely increased and developed for the same purpose.

An Investiture.

A correspondent writes :—

Mr. W. G. Yeulett, of Walton, was presented at Uxbridge on Nov. 12th, by Sir John Maitland Salmond, K.C.B., with the Distinguished Flying Cross, won by his son, the late

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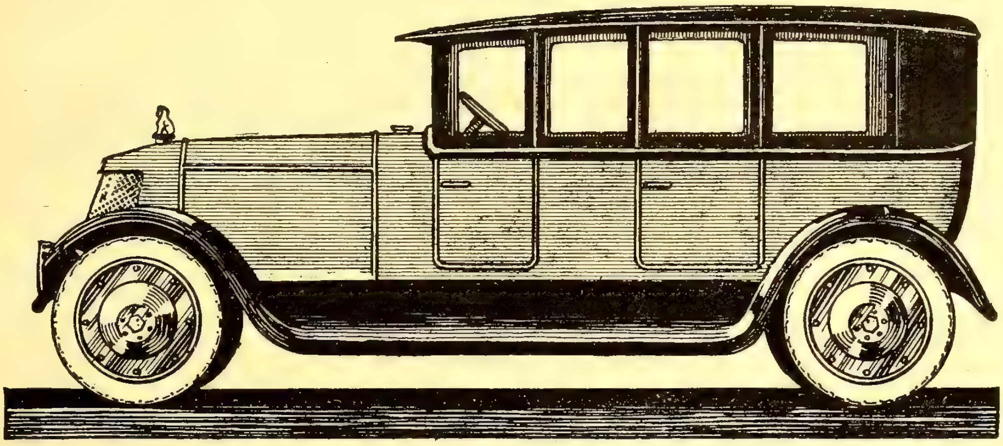
R.A.C. Rating 29·5 H.P. *Treasury Tax £8.8.0.*



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Lieut. W. A. Yeulett, R.A.F., for "conspicuous gallantry in a long-distance bombing raid upon enemy aircraft stations under very difficult circumstances in July, 1918." Lieut. Yeulett was killed during this raid.—J. F. S

The Relinquishment of Aerodromes.

It is stated in the local Press that both the Airship Station at Polegate and the Coal Aston Aerodrome are being closed down. The personnel and matériel in both cases are being transferred to other stations.

Andover Aerodrome.

The Andover Guardians, who complained to the Air Ministry concerning the waste of timber at the Andover Aerodrome, have received a reply to the effect that the dump consisted of surplus hangars from all the aerodromes of the district, which had been brought to Andover for disposal. Some had been removed, others would be shifted for service elsewhere, and the remainder, from 18 to 20, would be disposed of by the Disposal Board.

The Andover Guardians were not satisfied with the reply and have decided to approach Sir Auckland Geddes on the matter.

Alexandra Park, Manchester.

The decision of the Air Ministry to relinquish the Alexandra Park Aerodrome, Manchester, in the near future on the ground of economy has led to the Lord Mayor and local members of Parliament making strong representations with a view to its retention, as it is considered to be of great importance to the future of Manchester as an industrial centre.

The Howden Airship Station.

The "Yorkshire Herald" of Nov. 3rd makes the following revelations with regard to accidents at Howden during the war:—

"The first accident happened in 1917, when a small airship came to grief near Foggathorpe Hall Farm. The crew fortunately jumped from the ship and were saved. The ship was a total wreck. Later in the year another ship of a similar type fell into the Humber, three of the crew being killed and the craft destroyed. In 1918 an accident occurred at the station. It was caused through a fire breaking out in R.27, which spread to three other 'blimps' all housed in one shed. A bomb in R.27 exploded, wrecking the ship and making a large hole in the roof of the shed. All the aircraft involved were destroyed, and one young man, who was on the look-out on the shed top, was suffocated. There at present lies near to the sheds a large heap of firewood and wire which was originally R.31, which broke its back after being prepared for a trip to Scotland."

This paper also states that since the decision to make Howden permanent, the aerodrome has been extended by commandeering land on the Spaldington side.

Fencing in the R.A.F.

The Royal Air Force have concluded a series of fencing competitions at Uxbridge.

The competitions, which were open to all ranks of the R.A.F., comprised Foil v. Foil, Sabre v. Sabre, Epée v. Epée, and Bayonet v. Bayonet, and as a result the following officers and warrant officer who were first, second or third in all events, qualified to represent the R.A.F. against the Army fencing team in London on Wednesday, Nov. 19th:—Squadron Leader E. G. H. Clarke, M.C., Flight Lieut. F. G. Sherriff, M.C., and Sergt.-Major H. Grainger.

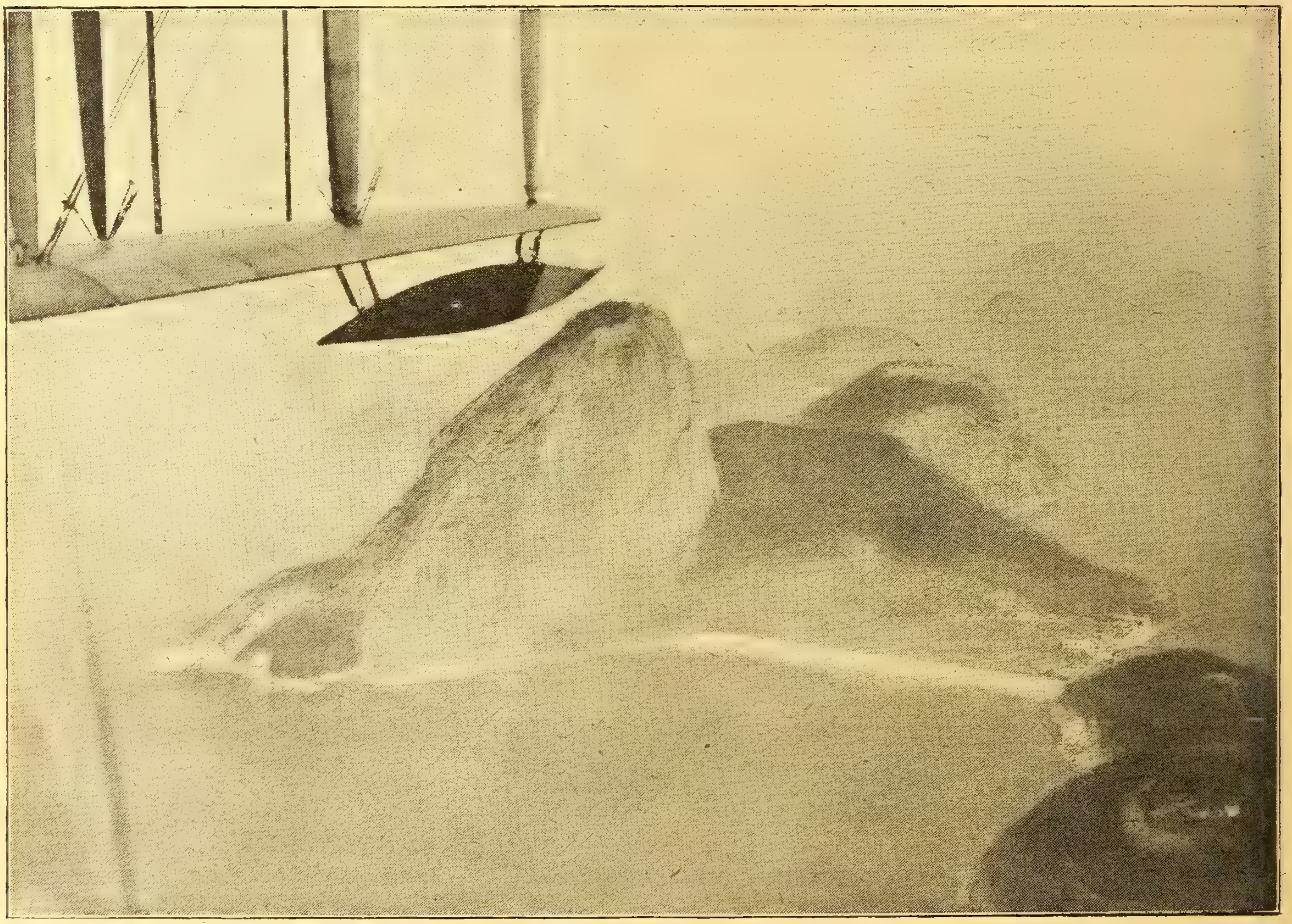
R.A.F. Titles.

The following letter has been received:—

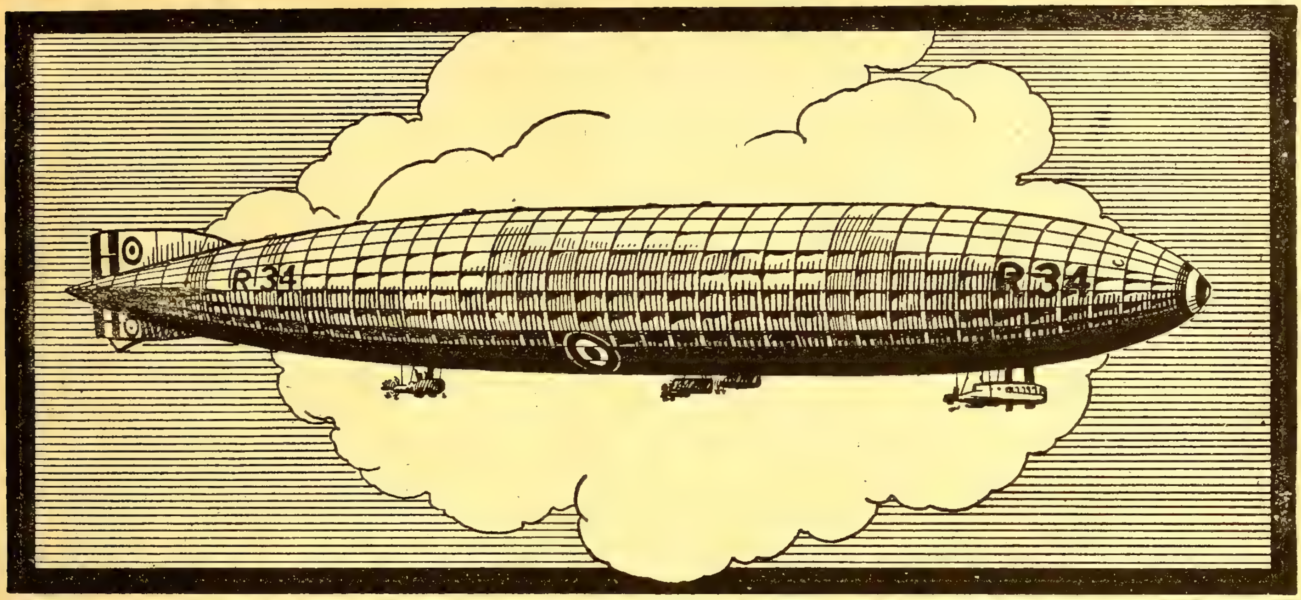
Sir,—There is one point about the new titles for the Royal Air Force which does not so far appear to have been considered, and that is—how are they to be used socially and in ordinary conversation?

No doubt in the higher ranks, Wing Commander, Group Captain, Air Commodore, etc. (by the way, what a pity all the titles are double-barrelled), the prefixes will be generally omitted and officers will be called simply "Commander," "Captain," etc. This will cause confusion with the Naval ranks of similar name, and to this extent the Air Ministry's desire to obtain distinctive titles will be defeated. I suppose, however, this factor was taken into consideration when the new titles were decided on.

The title "Squadron Leader" is entirely new and presents some difficulties when considered from a social or conversational point of view. Suppose we wish to invite Squadron Leader Jones to dinner, should we write "Dear Squadron Leader Jones"? Even if we do, we cannot imagine Jones' partner at dinner addressing him all the time as, "Oh, Squad-



The Sugar Loaf Mountain in the entrance of the Bay of Rio de Janeiro, photographed from 1,500 by a Brazilian Naval Aviator.



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ron Leader Jones, do tell me what it feels like to fly," etc., etc. Yet dropping the prefix in this case does not help at all, for "Leader" by itself sounds even worse.

Flight Lieutenant can and will, of course, be shortened to Lieutenant; but the new titles of "Flying Officer" and "Observer Officer," and "Pilot Officer," present the same difficulty as Squadron Leader.

Officers of the last two ranks will presumably be know as "Mr."; but I would like to suggest that the use of the title "Mr." be carried further, and that the same convention be adopted throughout the R A.F. as is used in the Navy, where all Officers of the rank of Lieut.-Commander (corresponding to Squadron Leader) and below are addressed as "Mr."

(It is true that one sometimes hears Lieutenant-Commanders addressed or referred to as "Commander," or even "Captain"; but this is only done by people outside Naval circles, who are ignorant of the proper convention.)

The question for the Air Force is hardly one about which we can expect the powers that be to issue regulations or lay down hard and fast rules. But considering that for every time one's title is used officially (e.g., in official correspondence, etc., when, of course, the full title would be given), it is used probably a hundred times in ordinary conversation, it does seem to me to be one which should be settled as soon as possible so that the necessary convention may grow up.

I suggest, therefore, that every officer and every mess in the R.A.F. should agree that in ordinary conversation all officers up to and including the rank of Squadron Leader be referred to as "Mr." If this custom were brought into practice at once it would very soon be fixed in general use.

To some people this may seem a trivial matter; but personally I think that in a new Service like ours small points like this are of some importance.

(Signed) Squadron Leader, R.A.F.

FRANCE.

The French Mission in Chili.

On Nov. 6th M. Gilbert, Minister of France in Chili, gave a banquet for Capt. Guichard, member of the French Aviation Mission. The G.O.C. the Chilean Aviation Service and his staff were present at the dinner.

SPAIN.

An aeroplane crashed in the evening of Nov. 16th, or, as another says, early in the morning of Nov. 17th, at Casas de Villaseca, in the commune of Benamira, in the province of Soria. The crew, Capt. Laños, the French aviator Augostini, and three mechanics, were killed.

It is thought that the machine is a twin-engine Farman, built to carry seven passengers, and that it was piloted by the French aviator, Augostini, who was due to arrive on Nov. 16th at Cuatrovientos, Madrid, from Pau, at the same time as another machine piloted by the aviator Sains, who landed later.

ITALY.

Post-War Relations.

The Italian correspondent of The Aeroplane writes :—

In reply to a venomous attack on war expenses in a Turin paper commonly reputed to be the organ of the anti-Italian part, the Hon. Chiesa, ex-Under Secretary for Aviation, who held office during the most difficult period of the war with courage and conviction, writes of the conditions of those times and gives unpublished particulars of great interest.

Promised by the Naval authorities—who were themselves clamouring for "600" Capronis to the number of 1,200—some 10,000 tons of transport space per month for the carriage of raw materials from America, the Ministry obtained 600 tons space owing to the lack of shipping which was caused by war losses. At that time about 386 millions of lire had been assigned and orders given to the aero trade.

Without consulting the constructing firm in Italy the Hon. Chiesa's predecessor had given free and gratis the right to build 1,000 Capronis to the U.S. Government. Consequently the Ministry found itself up against various evident injustices and were inclined to be generous. (Hence, no doubt, all the envious feeling at the bottom of the long and lamentable display of jealousy.)

The Hon. Chiesa gives the following figures showing the height of production reached in 1918 by the Italian trade :—

Monthly output : Motors, 1,700; machines, 750. The material existing in December, 1918, and in active service conditions was : Motors, 9,743; machines, 5,950. One thousand six hundred and fifty engines and 2,400 machines were then in the refitting shops.—T. S. H.

One Result of Air Raids.

The Briglia del Carmine, the big electric power plant and building of the water supply station at Padua, which cost nearly 3,000,000 lire (about £120,000), with all its machinery, collapsed on Oct. 29th and fell into the canal of Bacchiglione. It is thought that the cause of this was the bombing of Padua in February of last year when three big bombs fell near this building. The building was erected in 1882.

U.S.A.

The following is extracted from the Official "Air Service News Letter" of the U.S. Army, dated Oct. 25th, 1919. When one compares the frugal extravagance of our own Air Ministry with the lavish expenditure on aeronautics in the U.S. Army one's opinion of British foresight fades.

"Air Service Legislation.

A Bill was introduced in the House of Representatives on Oct. 22nd, 1919, and referred to the committee on Military Affairs to the effect that the Secretary of War be authorised and directed to acquire for the United States, by purchase or condemnation, for use as an Aeronautical Experimental development and engineering plant, the following pieces of real estate :—

"The Dayton-Wright airplane factory and plant situated on Edison Street, Dayton, Ohio, consisting of about thirty-three (33) acres of land at a cost not to exceed three hundred and ninety thousand and ninety dol. and eighty cents ($390,090.80); the land adjoining the Dayton Plant, known as the Moraine Tract, consisting of about eight hundred and thirty-six (836) at a cost not to exceed one million sixty-six thousand six hundred and thirty-six dollars and ninety-four cents ($1,066,636.94); also the tract adjoining and north-west of the Moraine Tract comprising about seven hundred and sixteen (716) acres at a cost not to exceed five hundred and nineteen thousand six hundred and forty-eight dollars and fifty cents ($519,648.50).

"That the unexpended balance of appropriations made heretofore for aeronautical purposes by the Act authorising the President to increase temporarily the Signal Corps of the Army, shall be made available for the purposes set forth; that the sum of one million one hundred and twenty-nine thousand five hundred dollars ($1,129,500) be appropriated from any money in the Treasury not otherwise appropriated for construction work on structures and utility or alteration or expansion thereof, or the installation of such equipment necessary for the establishment of an experimental engineering plant on the above described land. Two hangars, one at a cost not to exceed two hundred thousand dollars ($200,000) and the other not to exceed three hundred and seventy-five thousand dollars ($375,000)."

The Forest Patrols.

The commanding officers of March, Mather, and Rockwell Fields and the Ross Field Balloon School were instructed to arrange for forest patrols for the location of fires. The routes were laid out after consultation with the District Forester and the patrols began on June 1st last. It was thus possible to give information as to forest fires within fifteen minutes of their outbreak. Each aeroplane so employed is fitted with a wireless outfit and reports at intervals throughout its patrol. Its position at any given moment is known to the officer commanding the landing ground from which it started.

The following extract from a letter written by the Forestry Service is of interest :—

"The value of timber given protection by forest patrols in the Tahoe National Forest is estimated at $18,000,000 and the value of farm property and crops is estimated at the same figure, to that date 30 fires being reported, 12 being inside forest. In the Stanislaus National Forest the value of timber protected is estimated at $19,280,000 and in the Eldorado National Forest at $25,000,000. Aircraft having proven of such value in reporting fires, the Department Air Service Officer was given authority to establish additional patrols during the time when fires were most serious in the forest areas of California. During the week of the Oregon patrols (which were organised later) 16 patrols were made and 28 fires located. A patrol of the whole State began on August 9th, with bases at Roseburg and Salem, and a consolidation of the daily report shows the following data for the month of August. A total of 82 patrols were made, 190 fires reported and 13,835 miles flown. During the latter part of August, Salem and Roseburg were abandoned and a new base established at Redding, California, also one at Fresno, California. On Sept. 17th the base at Redding was changed to Redbluff, California, and this patrol has since reported as many as ten fires in a day."

The forest patrols have worked with great success. Intentional fires are being prevented. Many patrols cover 300,000 acres twice in one day. Under normal conditions, before aeroplanes were used, 24 hours at least elapsed before detailed information as to fires was received, whereas on a recent occasion the District Forester was able to plot two great fires on one map in the course of a 90-minute flight. During Sept. 249 patrols were carried out, 67,511 miles covered and 160 fires reported.

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THE SOPWITH MACHINE.

A Reuter message from Mayence, dated Nov. 16th, stated that Captain Matthews has been detained at Gouzenheim, five miles from Mayence, for the last ten days owing to bad weather.

THE VICKERS MACHINE.

Capt. Ross M. Smith, M.C., D.F.C., A.F.C., accompanied by Lieut. K. M. Smith, Serjeant Bennett, and Serjeant Shiers, left Hounslow on the Vickers-Vimy machine on Nov. 12th, at 9.10 a.m. The Royal Aero Club were represented by Major R. H. Mayo, and Lt.-Comm. H. E. Perrin, and Vickers Ltd. by General Caddell. A correspondent writes :—

The machine was constructed and tested at the Weybridge works of Vickers Ltd. It was put through its final test flights by Capt. Sir John Alcock at Brooklands, which is a happy omen for the success of the flight, considering that the "Vimy" Transatlantic machine was also constructed and tested by Sir John Alcock at Brooklands.

The Australian "Vimy" is practically identical with the Transatlantic "Vimy," except that it has a front skid in place of the fifth wheel on the other machine, and has a smaller petrol capacity.—J. F. S.

On Nov. 13th news was received that the machine had reached Lyons after a flight of about six and a half hours, and on that day they landed at Pisa.

It was reported on Nov. 18th that the machine had arrived at Rome after experiencing very bad weather.

THE BLACKBURN ENTRY.

The Blackburn "Kangaroo" (two Rolls-Royce "Falcon" engines) was to have left Hounslow on Nov. 17th, but the start had to be postponed owing to the weather. The machine was to fly from Brough in Yorkshire to Hounslow on Nov. 18th, if the conditions were favourable, and start for Australia on the next day.

THE ALLIANCE FATALITY.

The third British machine to leave for Australia was the Alliance, with a 450-h.p. Napier engine. Piloted by Lieut. Roger Douglas, M.C., D.C.M., Aus.F.C., and with Lieut. J. S. L. Ross, Aus.F.C., as navigator, the machine left Hounslow on Nov. 13th at 11.35 a.m.

A note was published on the aviators and their machine in the issue of THE AEROPLANE for Nov. 5th.

The Alliance passed over South Teddington very low down and attracted much attention owing to the noise that it made. At Kingston the machine appeared to be in difficulties, and at Surbiton it suddenly nosedived to the ground and broke down a large tree. The machine was totally smashed. The airscrew was found buried in a field near by.

The body of Lieut. Ross was found lying some seven yards from the aeroplane. Immediately on the arrival of the police an effort was made to remove the wreckage, which had buried Lieut. Douglas, and eventually he was extricated in a dying condition and passed away in the presence of Dr. Pattison Armstrong.

The inquest was held on Nov. 17th. Lieut.-Col. Ridley represented H.Q. the Australian Imperial Forces, Mr. L. C. Tree watched the proceedings for the Alliance Aeroplane Company, and Viscount Erleigh, for Napier and Sons, Ltd.

The following account of the proceedings is taken from the "Morning Post" :—

Donald Easdale, chief draughtsman to the Alliance Aeroplane Company, identified the bodies as those of Lieut. Roger Douglas, aged 25, and of Lieut. James Stewart Ross, aged 24, both of the Australian Flying Corps. The two officers had been flying the machine which met with disaster for about three weeks and for several hours each day. The two officers understood its construction in every detail, having seen it built in the workshops. They were due to start on their flight on Thursday morning, but a late start was made owing to early snow and mist. As the weather became clear they set out at 11.33 a.m.

MACHINE IN PERFECT CONDITION.

James Arthur Peters, aeroplane designer, of Woodville Gardens, Ealing, said he designed the aeroplane. He and the chief test pilot flew a similar machine at Madrid in July last year, and they were also the first to fly the aeroplane which met with disaster.

The two officers were trained, and in the event of mishap to the machine they should have been able to deal with it. [It will appear that Mr. Peters did not say that these officers were trained in this particular machine, or that they had ever flown in it.—Ed. THE AEROPLANE.]

The machine was in perfect condition, and was ready to start any time after dawn. It was "run up" to the satisfaction of Messrs. Napier's representative, and all the usual precautions were taken. Weather reports were received from France prior to the start. The total weight of the machine was 5,900 lb.

An independent examination had been made of the machine on behalf of the Air Ministry, and every control cable and lever was found to be connected and compact [(intact?)—Ed. THE AEROPLANE.] The engine had since been stripped and found to be in perfect mechanical order.

The log (produced) was kept by Lieut. Ross, and stated : "Left Hounslow, 1,200 feet. Engine, 1,650 revolutions per minute," and gave his course, which was approximately to where the machine was found.

It had been arranged (witness continued) that if a difficult landing had to be made with any considerable load of petrol the petrol release should be used. After the disaster that valve was found closed.

Three eye-witnesses called were P.C. Money, Arthur C. Knite, mechanical engineer, Abbey Road, St. John's Wood, and Mrs. Evelyn Jones, of Surbiton, who, respectively, estimated the height at which the aeroplane was flying just prior to the disaster at 500 ft., 700 ft., and 1,000 ft.

CLOUD DANGERS.

Mr. Knite and Mrs. Jones, who said she had lived in the vicinity of aerodromes for three years while her husband was a captain in the R.F.C., agreed that just before the disaster the engine of the aeroplane shut off. The machine came out of the clouds and then spun round as it nose-dived to earth. It appeared that the pilot did his best to right the machine, but failed.

Mr. Peters, recalled, said it was a common thing to come out of a cloud in a spin, and the obvious thing to do in that case was to shut the engine off and push the nose down. He was of opinion that the machine came out of the cloud too low. There was not sufficient room for the machine, whether at a height of 500 ft. or 1,000 ft., to right itself.

Lieut. Douglas, an exceptionally experienced pilot, undoubtedly did his level best to right the machine. If he (witness) had been in a similar position he could not have done more.

By Viscount Erleigh : Once in a cloud one lost sense of direction apart from instruments. It was difficult to tell then whether a plane was flying upright. The machine was designed for high flying.

The hearing of the case was subjected to several interruptions from persons at the back of the court. A gentleman, who said he was a licensed aeroplane engineer, asked permission to give evidence, but the Coroner, on learning that he had not the authority of the Air Ministry to tender such evidence, would not admit it.

Mr. Frederick Richard Draper, head of the testing department of Messrs. Napier, said the deceased officers told him that the aeroplane in question was the best machine they had ever flown, and that they did not wish for a better engine. Witness was present at the examination of the remains of the aeroplane by the Air Ministry that morning, and everything was found to be mechanically correct.

QUESTION OF SUFFICIENT TEST.

Miss Mabel Desmond Woolley, who was dressed in black, stated she was the fiancée of Lieut. Douglas, and asked permission to put to the experts the question whether they thought a five minutes' flight from Acton to Hounslow was a sufficient test for an aeroplane before a flight of several thousand miles to Australia was attempted.

The Coroner called Miss Woolley's attention to the evidence already given by Mr. Peters.

Miss Woolley : I know what I am saying. I saw Lieut. Douglas every night. My boy did not fly that machine until he left Acton Aerodrome for Hounslow previous to the flight. It was not ready before.

The Coroner : You have heard the evidence of the witnesses who are on their oath? In further reply to Miss Woolley, the Coroner said he was only inquiring into the cause of death.

Miss Woolley : Then you miss the things that matter.

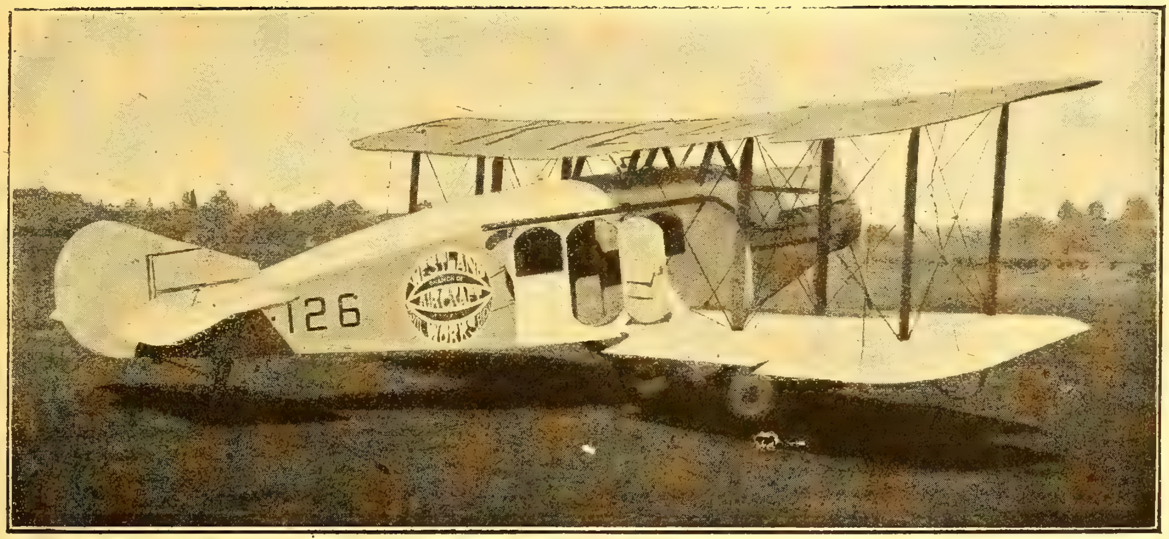
The Coroner : That means I am incompetent or not doing my duty?

Miss Woolley : I think you are not doing your duty.

The Coroner : Very well; you can apply to the Lord Chancellor and say so.

The Coroner read a report which Lieut. Douglas had submitted to the Alliance Aeroplane Company on Aug. 21st stating that since he had joined the Royal Flying Corps he had flown practically every type of machine, and that he was firmly convinced that the particular machine on which he was going to make his flight was far superior in every respect to any type he had ever lifted off the ground.

WESTLAND



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Another Interruption.

A man who said he was a friend of Lieut. Ross, and who had been repeatedly interposing questions, protested that he was not allowed to put them to the witnesses. "Not enough," he added, "has been said as to what happened on Oct. 30th and Nov. 13th.

Miss Woolley: That is what I say.

The Coroner (to the man): Do you know?

The Interrupter: I do, sir, but you will not hear me.

The Coroner: I will not hear you now, and I will get the police to remove you if you trouble me any more.

The Interrupter: It is a packed room.

In summing up, the Coroner said they were not there to make all sorts of inquiries, but to ascertain the cause of death. The jury might take it that the authorities both at home and in Australia would hold a different inquiry, at which all the questions such as had been raised that day could be thrashed out.

A verdict of accidental death was returned, no blame being attached to anyone.

[It is to be hoped that the evidence to be given at the official inquiry will be published, as it seems that there is other matter affecting the accident which was not brought out at the inquest. The accident, occurring as it did to a machine which occupied public attention, has no doubt shaken the faith of some members of the public in the safety of Civil Aerial Transport, and it is very desirable, in the interests of the British Aircraft Industry in general and of the Alliance Company in particular, to remove any impression that evidence is being withheld.—Ed., The Aeroplane].

LORD FISHER AGAIN SPEAKS.

The following letter appeared in the "Times" of Nov. 6th:

Sir,—By land and sea the approaching prodigious aircraft development knocks out the present Fleet, makes invasion practicable, cancels our country being an island, and transforms the atmosphere into the battle-ground of the future.

I say to the Prime Minister there is only one thing to do to the ostriches who are spending these vast millions ("which no man can number") on what is as useful for the next war as bows and arrows!—"Sack the lot."

Yours, Fisher.

Postscript.—As the locusts swarmed over Egypt, so will the aircraft swarm in the heavens, carrying (some of them) inconceivable cargoes of men and bombs, some fast, some slow. Some will act like battle-cruisers, others as destroyers. All cheap and (this is the gist of it) requiring only a few men as the crew.

No one's imagination can as yet depict it all. If I essayed it now I should be called a lunatic. I gently forecast it in January, 1915, and more vividly on July 11th, 1918. We have the star guiding us, if only we will follow it.

"Time and the Ocean and some fostering star
In high cabal—have made us what we are!"

On Friday last the presiding genius at the "Marine Engineers" said: "The day of oil fuel and the oil engine had arrived." In 1885 I was called an "oil maniac."—*Nunc Dimittis*.

The following appeared under the heading "Marr'd" in the "Times" of Nov. 10th:—

Sir,—Do you hear the bleating of these sheep in your ears? We are going to hew Agag into pieces! (I refer to the moaning of the Admirals and to the keeping the best of the ships—exactly the same spirit as Saul.) There was the same bleating of the sheep and the same preservation of Agag when masts and sails were doomed and the engineer came into his own! Saul got kicked out for not "sacking the lot."

The reason I put the word "marr'd" at the head of this letter is that when, six months before the war, a Cabinet Minister of that period read my printed memorandum that German submarines would sink defenceless merchant ships with their women and children, he observed that I had "marr'd" my memorandum by that prophecy! Don't let us have another "marr'd" prophecy.

The air controls the water. Unless all warships can get under the water they will be blown out of the water. Millions upon millions of money are still being wantonly wasted in the upkeep of ships that can't be used in war. When this winter the price of food and coal goes up, the masses will "sack the lot." A gust of fury will clear out this effete Parliament.

Yours, Fisher.

AN OPPORTUNITY FOR BRITISH MANUFACTURERS.

It is stated upon excellent authority that the Monaco meeting to be held at the end of April next will include a competition for seaplanes.

The exact details have not yet been officially settled, but the general principles upon which the competition will be based are as follows:—

On the first day competitors will be required to fly from Monaco to Tunis, with an intermediate landing at Corsica. On the second day they will fly from Tunis to Kabes and back. On these two days marks will be allotted on a basis of useful load carried and on petrol consumption. On the third day a non-stop flight from Tunis to Monaco will complete the tests, and this flight will be marked on the speed attained alone.

All landings are to be made in the open sea, and all competitors will, it is understood, have to carry a specified minimum useful load over and above crew and fuel, of something of the order of 200 kilogrammes.

"THE AEROPLANE IN THE GREAT WAR."

The Aeroplane in the Great War. By W. L. Wade. Pp. vi+229. Illus. London: Virtue and Co., Price 16s.

The late Mr W. L. Wade was for some years before his death the assistant editor of The Aeroplane. Incapacitated by physical disability from entering His Majesty's service during the war, he served his employers with a devotion and single-mindedness none too common in modern life. His knowledge of aeronautics was extensive, and his vivid memory enabled him to write with accuracy and interest on the history of the progress of flying in all its branches.

Shortly before his death he completed the writing of the book now under review. All that remained was to correct the proofs and to supervise the general arrangement of the work. Both of these have since been done by Mr. C. G. Grey, the editor of this print, as a token of his high opinion of Mr. Wade's character and ability.

There are only two ways in which to write a book on military aviation in the past war. The first of these is to deal exhaustively with each branch of the subject and to relate with meticulous accuracy the aerial events of each day during the war. A work of this nature would hardly be encompassed in half-a-dozen volumes, and its preparation would take years of arduous endeavour. The examination and collation of the necessary official documents would provide employment for several people for months to come. The alternative is to write a popular disquisition which would relate briefly the progress of the employment of aircraft in war, give typical stories of the varied incidents which occur in aerial history, and convey a general impression of the life and duties of the military aviator.

Mr. Wade's book is arranged on the latter plan, and he has succeeded in giving an excellent general survey of wartime aviation. He has devoted little space to the intricacies of detail and has instead illustrated each of his points by anecdotes of actual incidents. Each theatre of war is dealt with in turn, and there are chapters on bomb raids, reconnaissance, queer landings, captures, and the "star turns" of the Flying Services. Signor Gabriele d'Annunzio, once renowned for the charming decadence of his plays and now known chiefly as a practical apostle of "self-determination" in world-politics, has a chapter largely devoted to his exploits as an observer on bombing machines.

The book is free from irritating inaccuracies in the names and ranks of pilots, and naturally there are no mistakes in the descriptions of the aeroplanes or of the work done by them.

An excellent summary of each year of war in so far as aviation is concerned is inserted at the end of the volume.

There are many illustrations, some of them coloured, and all save a few photographs are drawn by Mr. Geoffrey Watson. The book is well designed as a suitable present for the youth whose growing interests are centring temporarily on aviation.

THE SONGS OF THE R.A.F.

The following letter has been received from Mr S. G. E. Inman Knox, Lieut., R.F.C., 69, Sumner Place Mews, S. Kensington:—

Sir,—A few of my friends and myself, ex-R.F.C. officers, are endeavouring to compile a complete collection of the songs of the Flying Services, with a view to publishing them.

We would be very much obliged if any of your readers would be so good as to send any flying songs, or parodies they know of, to the above address. We would also like to point out that songs that were well known in some squadrons were practically unheard of in others, so all will be welcome.

We should be very grateful if you could find room for this letter in your columns, as we feel that such a collection of the many songs that did so much to brighten the "dud-weather" periods in our overseas squadrons will find a welcome, not only in the R.A.F. messes still "carrying on," but in the homes of ex-flying men when now and then old members of the Services foregather.

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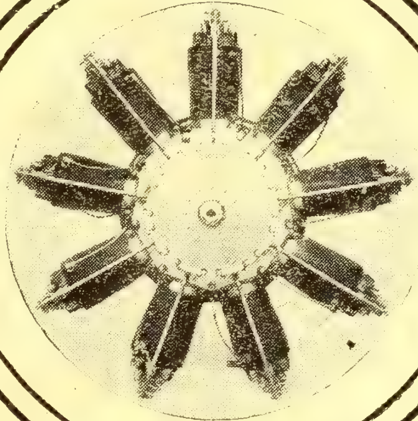

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THE WEEKLY COMMENTARY.

In this issue there begins a very interesting and highly eulogistic report upon the design, construction, and performance of the Rolls-Royce aero-engines.

This article is abstracted from the German journal "Der Motorwagen," and is based on examination of various samples captured by the German forces during the War.

It is probably the most disinterested and the most gratifying testimonial to the enterprise of the British Aircraft Industry which has yet been penned.

A further instalment of the article on the work of the Experimental Depot at the Isle of Grain gives details of a high-speed seaplane scout and of a two-seater reconnaissance ship-plane designed and built at that station.

Details of a number of accessories of interest to the Aircraft Industry which are to be found at the Motor Show, Olympia, are given on page 1748.

A GERMAN APPRECIATION OF THE ROLLS-ROYCE AERO ENGINE.

TRANSLATED BY ERIK HILDESHEIM, COPENHAGEN.

The report by Herr Otto Schwager, B.Sc., on the Rolls-Royce aero-engine, which was announced by the German technical journal "Der Motorwagen" last year as amongst the value to be given for the increased subscription rates, has now been published.

The following is an abstract of that account :—

One of the most interesting of hostile aero-engines, on the highest plane in respect to design, is undoubtedly the Rolls-Royce.

Each detail of design has been dealt with most carefully and with highest affection. With respect to commercial manufacture one is inclined to say that the designer has done too much of good. At any rate, the aim could in many instances have been attained with much simpler means.

Yet, on the other hand, the Rolls-Royce motor is a classic example of how the designer can avoid every possible difficulty which can be foreseen in the design and thus ensure success; for many details of design are undoubtedly not the results of long lasting experiments, but the achievement of a thinking designer.

The motor is built in two different models, as a 12-cyl. V-type engine, either with 101.6 mm. bore and 146 mm. stroke, or with 114 by 165 mm. bore and stroke. The nominal output of the small motor was originally 190 h.p. and of the large one that of 250 h.p., which have been gradually increased to 275, 320, and 352 h.p., partly as the result of an increase of the number of revolutions from 1,600 and 1,650 to 1,800 r.p.m., and partly by increasing the compression ratio from 4.84 to 5.51 and to 5.43, and by increasing the gas intake sections.

In the accompanying table of figures the various figures of the design—partly given on the maker's nameplate and partly derived from measurements and trials carried out—have been grouped. The two more powerful engines in this table are distinguished by the type word "Eagle," and the new editions of the small engine are provided with a similar trade word, "Falcon."

The large type will be described by means of illustrations and drawings, and the differences, marking the various horse-powers, will be reported upon in detail.

The general arrangement of the engine is evident from the illustrations The case will be seen to be of a 12-cyl. V-type motor with a gear drive to an airscrew hub on the same line as the crankshaft.

The whole motor is mounted on a crankcase which, with the exception of the gear-box bolted to the front side, is composed of three main parts : the top, bottom, and rear ones, the latter serving, especially the housing of the driving parts, for gearing, magnetos, and the remaining apparatus.

The top part of the crankcase contains mainly the bearings of the crankshaft, of which there is one between each crank. As torsion stress is as far as possible kept off the case by the provision of counterweights at each crank, the designer had not to pay undue attention to a rigid form, and the crankcase top half appears to be carried out rather light considering the horse-power. The bearing bridges extend across the whole width, and are made as simple cross-ribs of T section, reinforced to carry the main bearing bolts and lubrication channels. By means of long through-going bearing bolts and steel caps, the bronze bearing brass with babbitt lining are mounted to the top part of the crankcase. The steel bearing covers are carefully guarded against deflection by deep ribs. Strong bronze intermediate layers between the joints allow a readjustment of the bearing brass without a remachining of the crankcase or of the steel bearing caps, and also act as a safeguard against turning.

For lubrication a round-running groove is provided in the interior of the brass, supplied with oil from the oil nozzle through two holes and a distribution groove, leading to the latter, somewhat above the joint.

The single cylinders subtend 60 deg. and are held by four bolts each fitted to four strong bosses. To avoid thread in the aluminium, studs are not used to hold the cylinders, screws with middle and bottom nuts fixed with split pins have been chosen. A safe distribution of the forces on the case is secured by a careful providing of strong ribs.

The crankcase top part is noteworthy owing to the nature of its mounting in the aircraft. Instead of the usual ledges cast on with horizontal bearing surfaces, vertical faced brackets are provided at each end of the case, to which brackets to suit to carry the engine may be affixed. The advantage of this construction is that special motor mountings can be done without, as the motor can simply rest on the fuselage longitudinals or in a corresponding auxiliary equipment provided in the body side walls, the engine itself acting as a beam, to which object the crankcase is especially adapted, as longitudinally it is very stiff between the mounting flanges. The objection that the bending stress is especially high on the case with this mounting, particularly in bad landings, which could be raised against this construction does not hold good on close study.

The crankcase lower part is mainly a deep oil sump, and is connected with the top part by means of many small square-headed screws. In cross-section it is strengthened by two strong cross-ribs. At the lowest point a flange is provided to which an oil filter is mounted. Two gauge-glasses are provided in each side. As with the joint of the two crankcase halves, the oil filter and the gauge-glasses are mounted with setscrews and nuts. Altogether threads in the

TABLE OF DATA OF ROLLS-ROYCE AERO ENGINES CAPTURED BY THE GERMANS.

Engine.	Normal H.P.	H.P. on test at normal R.P.M	Crankshaft R.P.M.		Airscrew R.P.M.		Petrol Consumption.	Bore.	Stroke.	Compression Ratio.	Mean Piston Speed.	Mean Effective Pressure.	No. and Type of Carburetter.	Carburetter.				Jet capacity (maker's figure).	Inlet Pipes.						Weight. (Dry.)	Weight per H.P. (Dry.)	Remarks.
																			Main.			Distributor.					
			Normal.	Maximum	Normal.	Maximum.								Dia. of Choke Tube.	Dia. of Petrol Jet.	Area of Choke Tube.	Gas velocity in choke tube.		Diameter.	Area of Section.	Gas Velocity.	Diameter.	Area of Section.	Gas Velocity.			
	H.P.	H.P.					Gr'ms per H.P. hr	mm	mm		m/sec	kg/cm2		mm	mm	cm²	m/sec	ccm	mm	cm²	m/sec	mm	cm²	m/sec	kg	Kg/HP	
Rolls-Royce	250	260 (287)	1600 (1591)		1024 (1017)		257 (252)	114	165	4,84 (4,66)	8,8	7,25 (8,05)	2 twin carburetters	38,5	16	9,6	93,5	420	44	15,2	59	44	15,2	59	384	1,47	2 Magnetos, old oil pump.
Rolls-Royce	275	300 (309) (307)	1650 (1616) (1635)		990 (969) (981)		246 (228) (229)	114	165	5,0 (4,8 (4,92)	9,1	8,07 (8,5) (8,36)	4 old single carburetters.	38,5	16	9,6	96,7	455	44	15,2	61	44	15,2	61	384	1,28	4 Magnetos, new oil pump.
R. R. Eagle	320	320	1800		1080		220	114	165	5,1	9,9	7,95	4 old single carburetters	38,5	16	9,6	105,2		44	15,2	66,4	44	15,2	66,4	400	1,25	4 Magnetos, new oil pump.
R. R. Eagle	352	352	1800	2000	1080	1200	228	114	165	5,43	9,9	8,7	4 new single carburetters	42	16	11,85	85,3		44	15,2	66,4	44	15,2	66,4	430	1,22	4 Magnetos, new oil pump.
Rolls-Royce	190	200	1700		1005		256	101,6	146	4,5	8,3	7,45	2 double carburetters.	38,5	16	9,6	69,8	400	44	15,2	44	44	15,2	44	315	1,57	2 Magnetos, old oil pump.
R. R. Falcon	250	250	2000		1179		225	101,6	146	4,8	9,7	7,95	2 double carburetters	38,5	16	9,6	81,6	430	44	15,2	51,5	44	15,2	51,5	325	1,3	2 Magnetos, old oil pump.
R. R. Falcon	264	264	2000	2250	1179	1327	220	101,6	146	5,0	9,7	8,4	4 new single carburetters	42	16	11,85	66,2		44	15,2	51,5	44	15,2	51,5	330	1,25	2 Magnetos, new oil pump.

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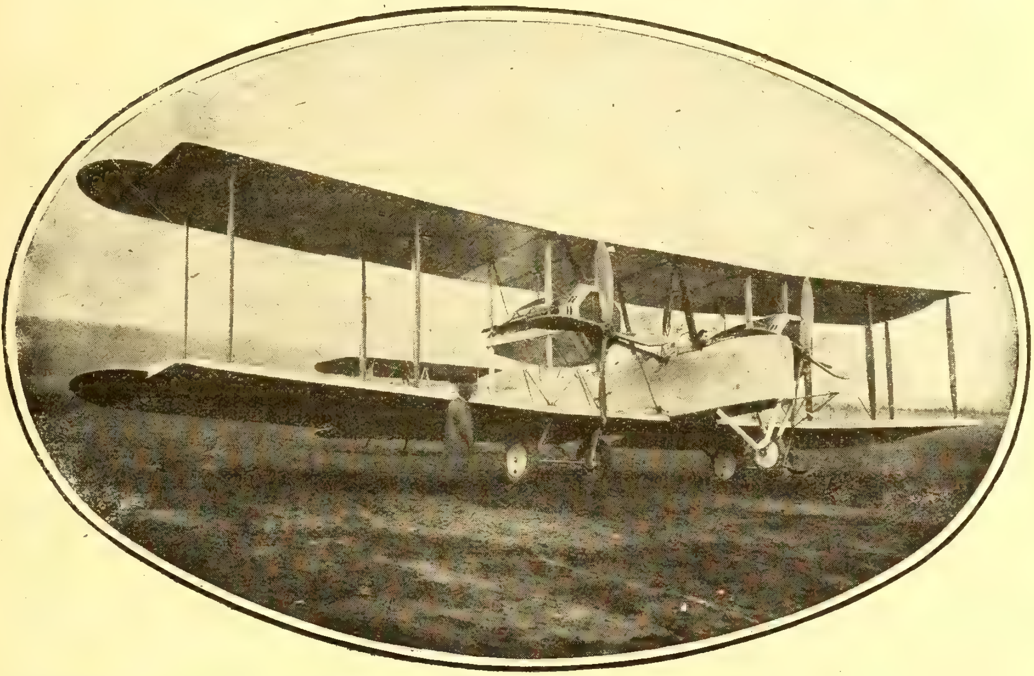

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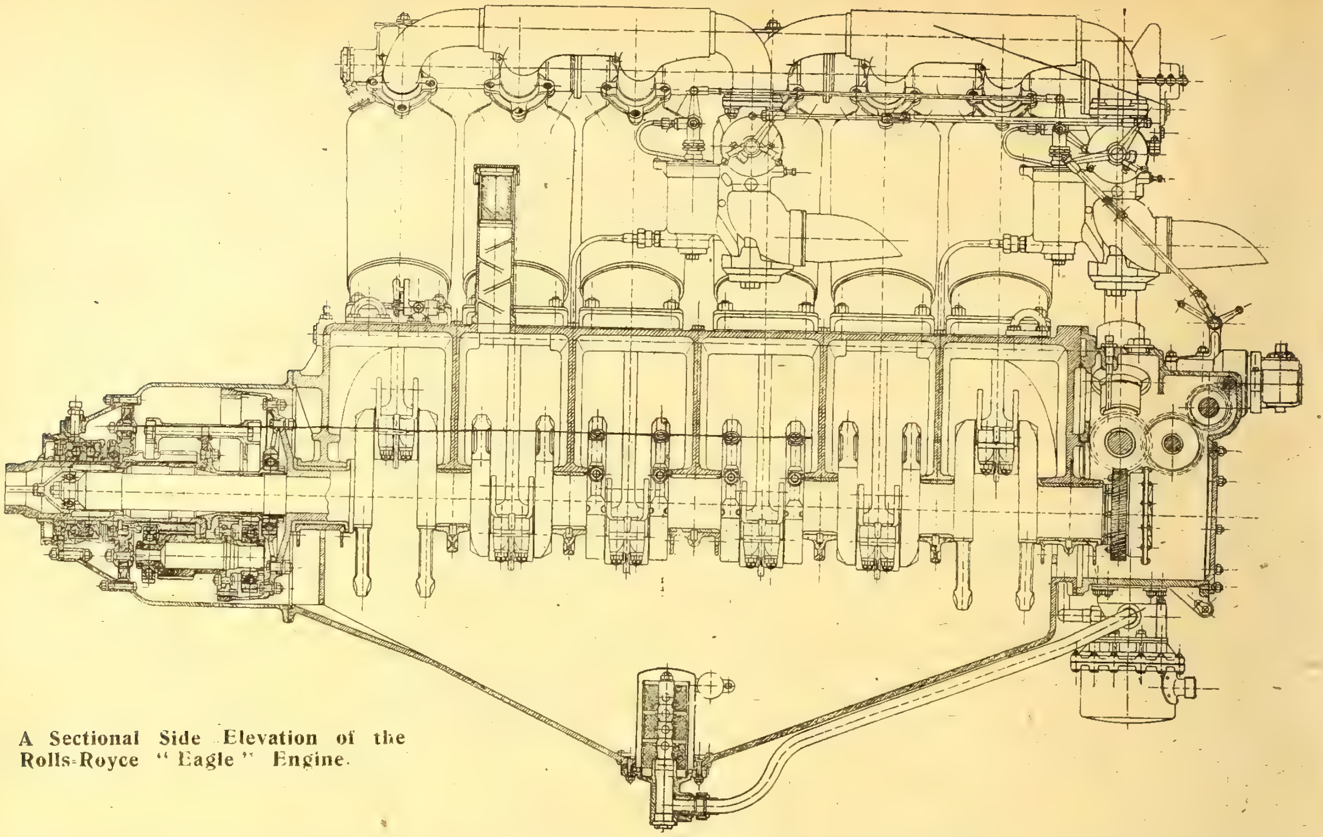


A Sectional Side Elevation of the Rolls-Royce "Eagle" Engine.

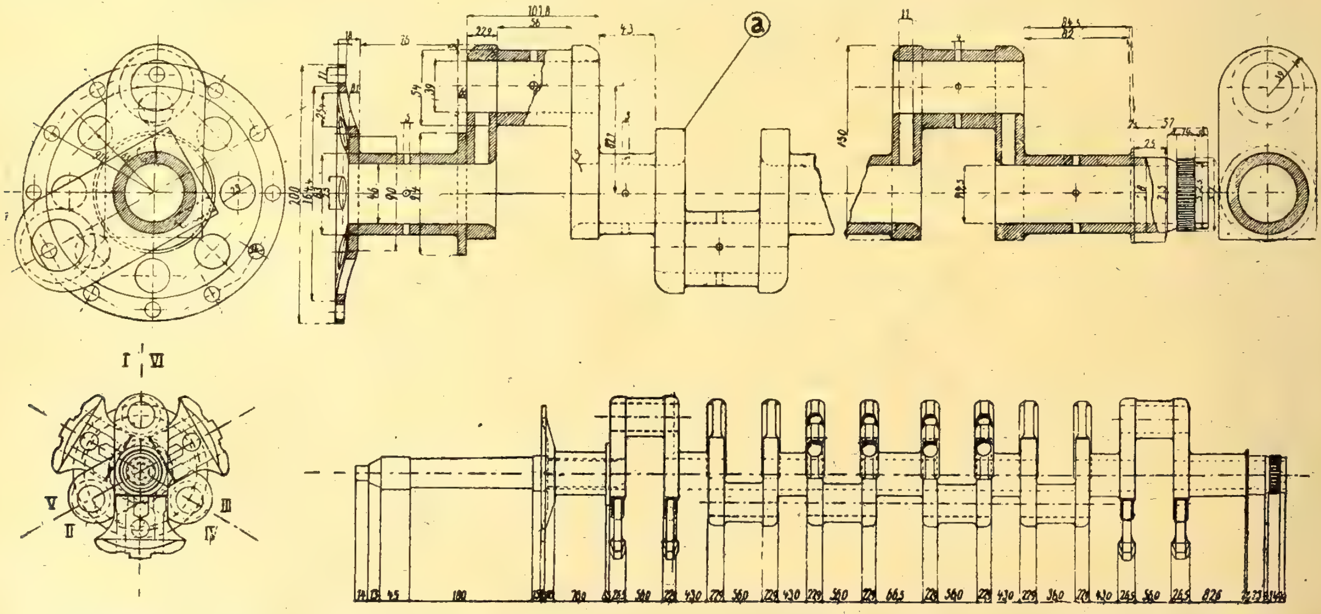
aluminium have been avoided whenever possible, which construction deserves special attention. Where necessary these setscrews are prevented from pressing during erection, as too in the oil filter mounting, by special hold rings, which are again screwed to the case by means of small setscrews without nuts.

On the rear end of the crankcase a special one-part auxiliary case is attached by a flange and studs. In this part the drives for the camshafts, magnetos, and the rest of auxiliary apparatus are housed. The magneto brackets also are separate castings, which are united to the crankcase rear part by means of studs.

Even though this extreme subdividing of the crankcase may seem somewhat intricate owing to the many faces to be machined, it affords too many advantages, as easy repair and mounting facilities. Most important, the auxiliary drives are often exposed to damage, frequently resulting in damage to the crankcase, in which case a repair by the little reliable welding procedure is necessary, if the whole crankcase has not to be abandoned at once. In the case in question one is more easily induced to sacrifice the damaged part and replace it by a new one. Thus the greater initial manufacturing costs are counterbalanced by low repair costs.

Only one single but amply dimensioned breather pipe is mounted between the cylinders on the front side of the crankcase top for ventilating the crankcase. The provision of baffle plates and a circular wire gauze strainer secures separation of the condensing oil vapours.

As already mentioned, the shaft, cranked six times in the usual way, rests in the crankcase top part in seven journal bearings. To do away as far as possible with the transverse stresses caused by the rotating masses, steel cast counterweights are mounted to each crank web by means of two stay-rods screwed into the crank web with castle nuts and cottars. These counterweights are secured against side displacement by fitting pins, screwed in. Thanks to this counterweight arrangement, the crankshaft could be kept comparatively very light by boring to a large diameter. These drillings are provided with caps, held in place by through-bolts with castle nuts and cottars. Compared with the usual rolled-in



The Rolls-Royce "Eagle" Engine.—At the top details of the crankshaft proper. Below the crankshaft assembly complete with balance weights.

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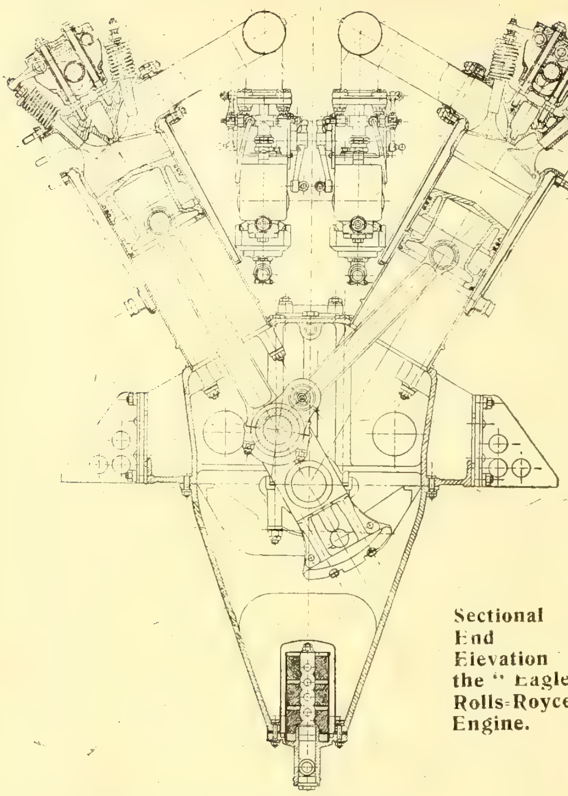
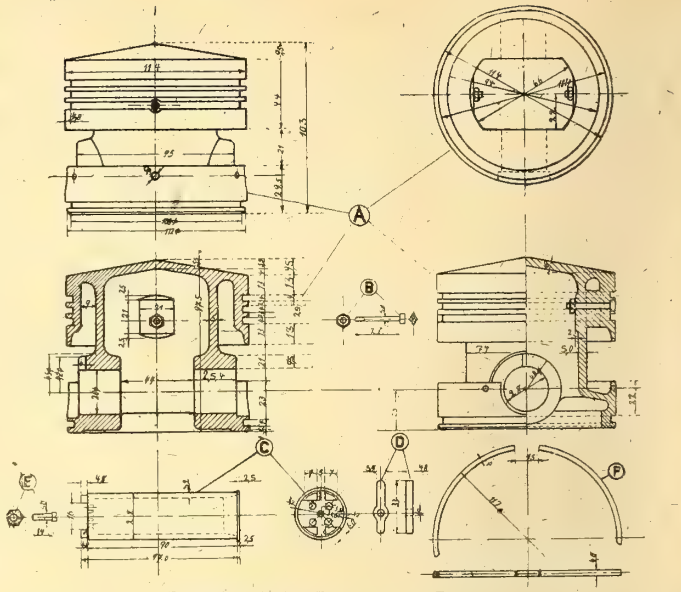


Sectional End Elevation the "Eagle" Rolls-Royce Engine.



Details of the Piston and Rings.

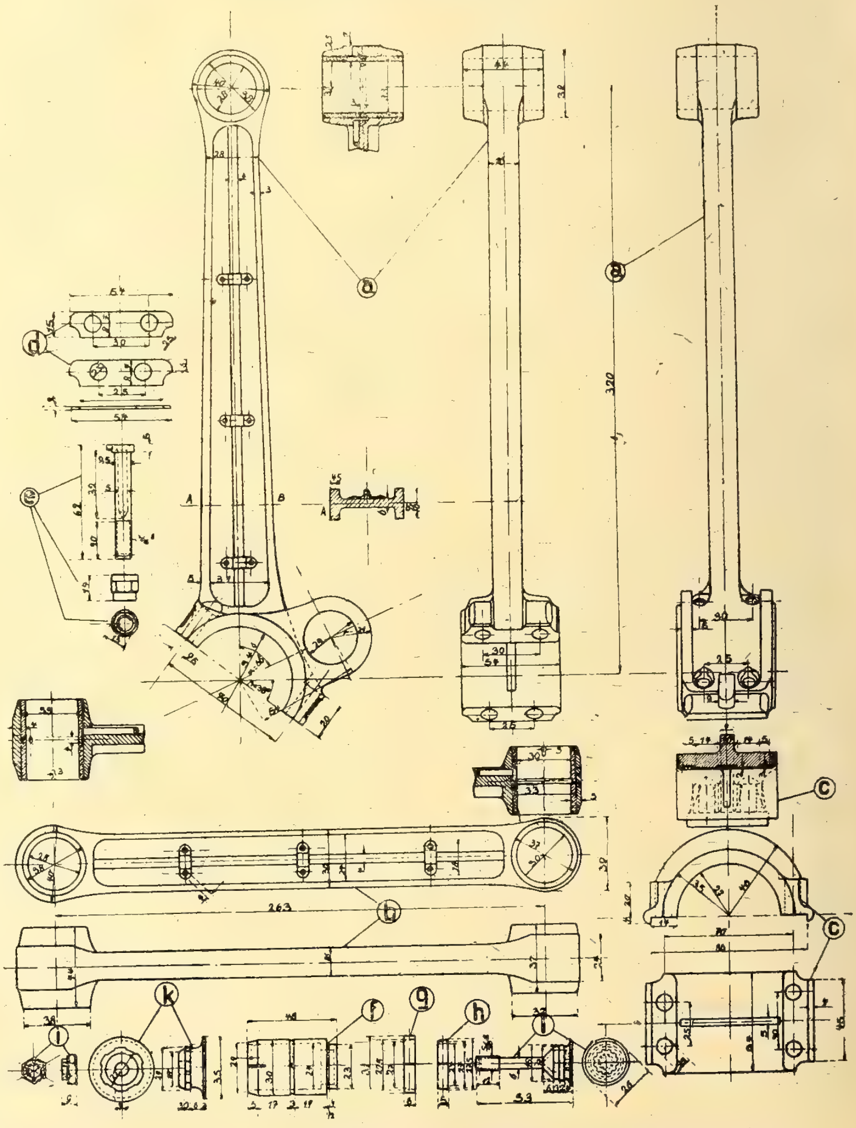
caps, this construction permits a careful cleaning of the interior of the crankshaft, which is most necessary when dismantling after melting out a bearing, when pieces of white-metal are apt to enter the crankshaft oil-channels and cause further seizing. For the supply of lubricating oil to the connecting-rods four holes are provided in each bearing, so that an ample oil supply is certain.

At the front end the crankshaft is provided with a flange for the internally toothed gear drive wheel, and a stub shaft is pressed into the bore of the crankshaft, on which the wheel spider for the planet wheels runs. The rear end of the crankshaft is splined for the drive of the valve gearing and auxiliary apparatus.

The connecting-rods are of double T section and are articulated. The master rod is provided with no special bearing brass, but the white-metal lining is cast direct in the end of the connecting-rod. The supply of oil for lubrication of the auxiliary rod wrist pin is from the main connecting-rod bottom end bearing through an oil hole drilled in the lug of the master rod. The wrist pin itself and its bush are provided with an all-round oil groove to ensure that the oil gets to the piston pin through the lubrication tube, which is fixed to the rod with three clips.

The aluminium cast pistons differ also completely from the usual model. The gudgeon pin bearings are not on the body of the piston, but on a special cylindrical part about two-thirds of the cylinder diameter. The piston guide surfaces are formed by collars projecting from this cylinder. The advantages of this design are the good transmission of the forces from the top of piston to the gudgeon pin, the low transverse stress in this part, and less liability to distortion due to longitudinal elongation of the gudgeon pin. Extraordinary, too, is the position of the gudgeon pin, almost at the lower end of the piston. At the top end of the guiding surface three cut compression rings are fitted that are prevented from turning by means of setscrews mounted in the piston with nuts. A fourth ring is provided in the lower end, serving here also as oilscraper ring as the part below the ring groove is 2 mm. less in diameter than the cylinder. In addition, the break in the bearing surface in the middle opposes the passing of oil into the combustion chamber. The gudgeon pin rests direct in the piston with no bushes in. At one end a small fishplate is screwed on, securing it against turning and side displacement.

(*To be continued.*)



Details of the Connecting Rods—the Rolls-Royce "Eagle" engine.

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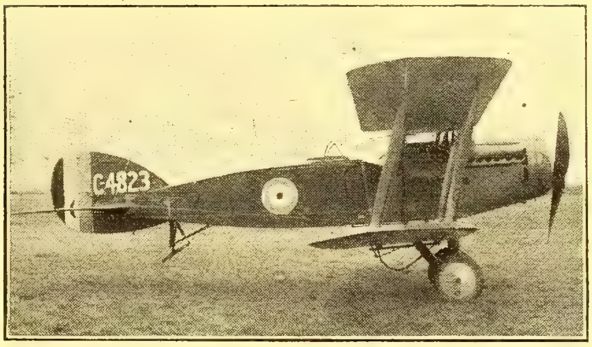

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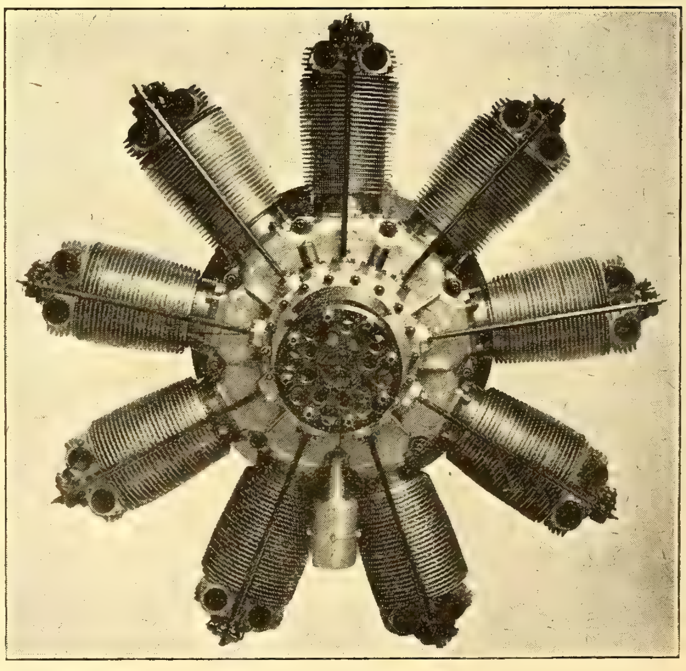

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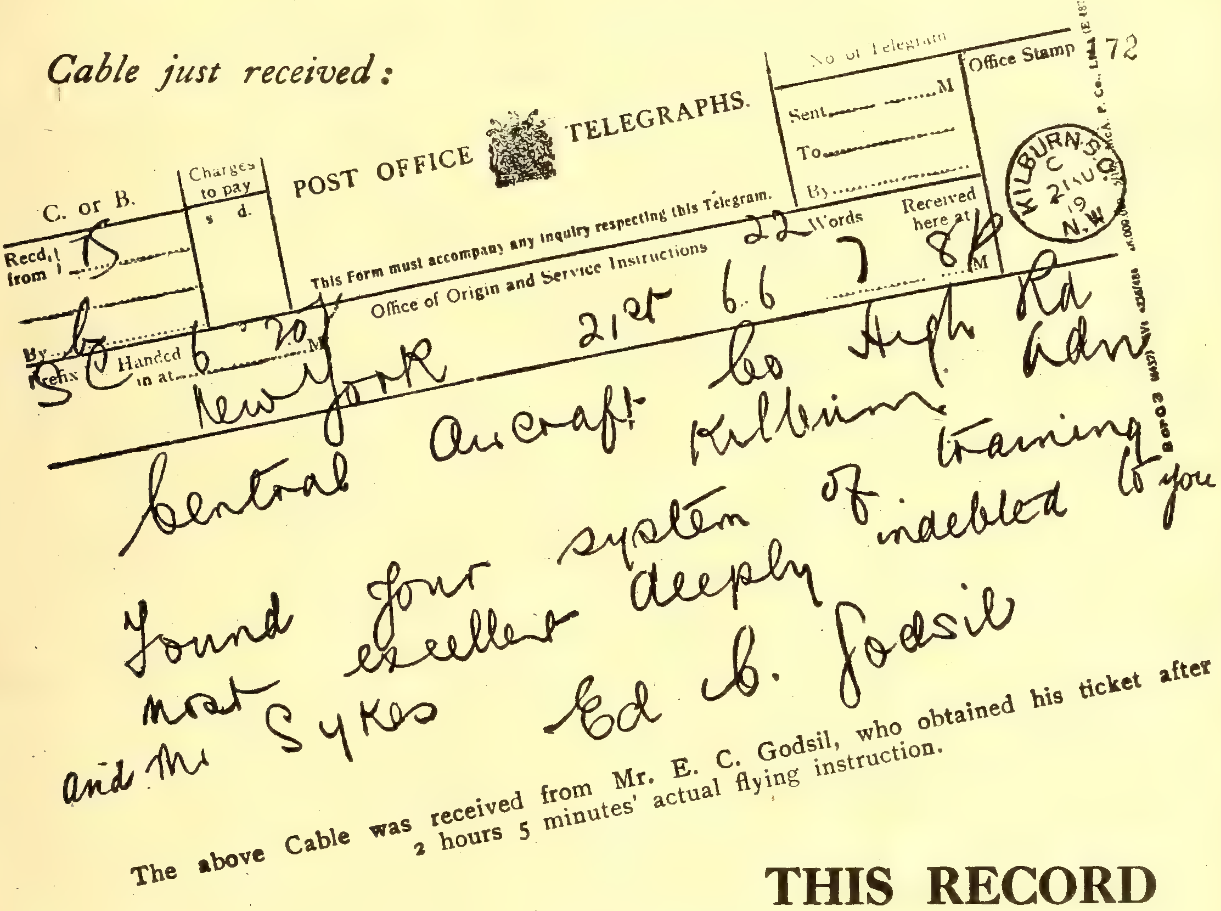

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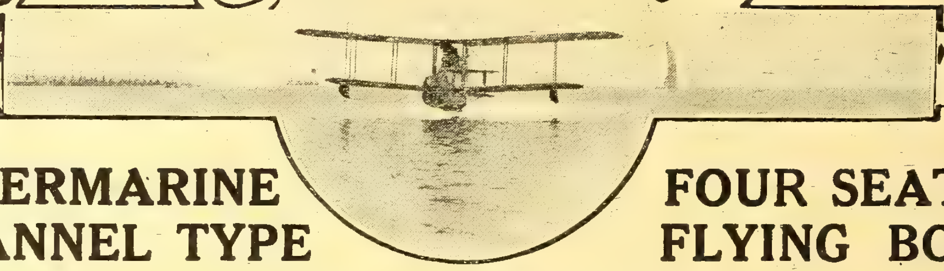

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London.

Agents for Australia :

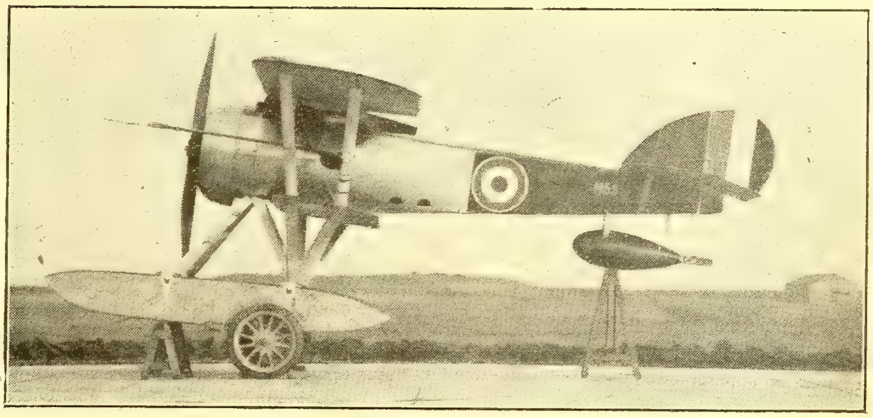
Messrs. Larkin-Sopwith Aviation Company of Australasia, Limited.

Melbourne Office : **"Aberdeen House," 94, King Street.**

Sydney Office : **"London Bank Chambers," Corner of Pitt and Moore Streets.**

THE WORK OF THE MARINE EXPERIMENTAL AIRCRAFT DEPOT, ISLE OF GRAIN.—(*continued.*)

BY CAPT. W. H. SAYERS, LATE R.A.F.



Side View of P.V.9 (B.R.1 engine).

P.V.9.

Whilst the "Kittens" were under construction, the drawing-office at Port Victoria were instructed to put in hand a single-seater fighter seaplane of the same general type as P.V.2, which should conserve the airworthy qualities of that machine with the excellent view which the type afforded, and should have a really high speed. The machine known as P.V.9 was accordingly designed. The engine in view was the 130-h.p. Clerget, and it was intended to use a high-lift wing and a high loading per sq. ft.

Unfortunately the prejudice against high-lift wings was then at its height, mainly because certain constructors had been instructed to use a particular brand of this type of wing with no information as to the special precautions needed to ensure success, and had turned out machines with very objectionable qualities, and the proposals of the Port Victoria design staff were turned down in this respect and instructions were given to use R.A.F. 15 section, in spite of their protest that this involved a high landing speed and a loss in climb on the limited dimensions prescribed. R.A.F. 15 was accordingly used, and the machine eventually produced was a compromise—forced on the design staff against their own judgment—with a low-lift wing fairly heavily loaded. To keep the loading to even the figure attained the machine had to be considerably enlarged and increased in weight, and although actually the machine gave very good results on tests, a very much better machine could have been built if the prejudices of pilots had not been allowed to influence the design.

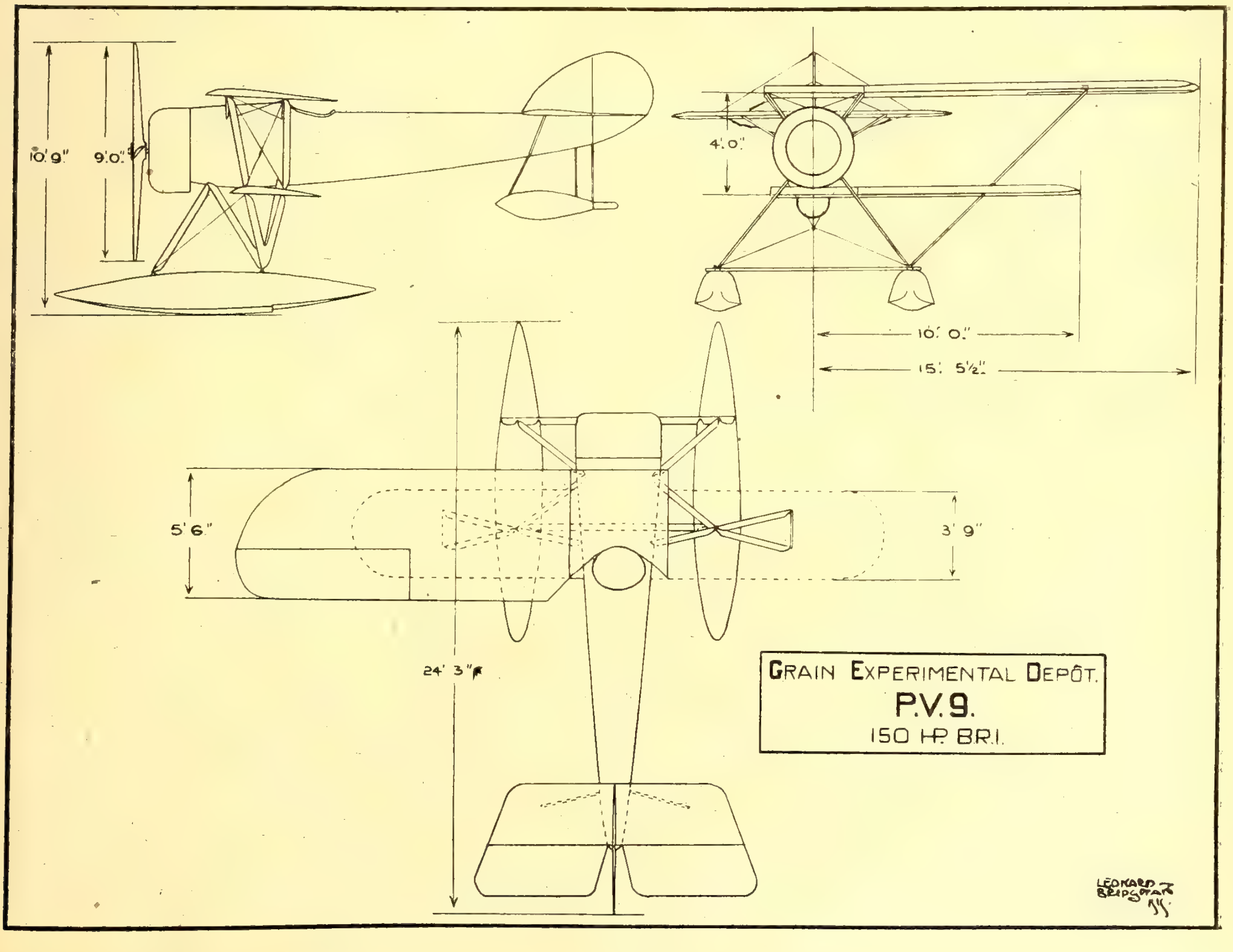
In general arrangement P.V.9 was an enlarged edition of P.V.2. The fuselage was somewhat widened and the fuel tanks were fitted one on each side of the fuselage, between the framework proper and the fairing which continued the line of the engine cowl. A very roomy cockpit was thus provided in a quite small fuselage.

A synchronised Vickers gun and a Lewis firing over the upper plane were fitted.

The wing structure was almost exactly that of P.V.2, except that the larger lower wing was supported by struts from the chassis to both front and rear spar, instead of by one only. Thus the wing struts in side elevation have the form of a V instead of the Y arrangement of P.V.2.

Floats of the Linton Hope type were designed for the machine, but were not in fact built, a pair of stepped pontoon floats being actually fitted.

A B.R.1 engine of 150 h.p. was installed, and the machine was flown for the first time in December, 1917. An argument with a barge delayed trials for some time, and then a series



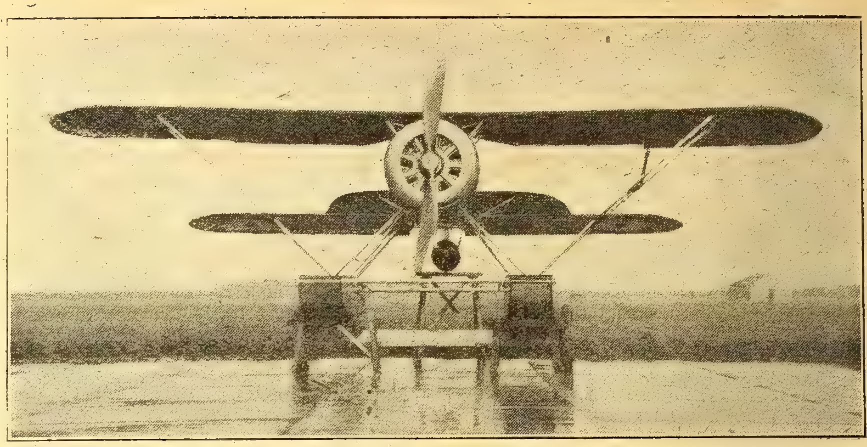
of engine troubles prevented proper trials being carried out till some time in the middle of 1918.

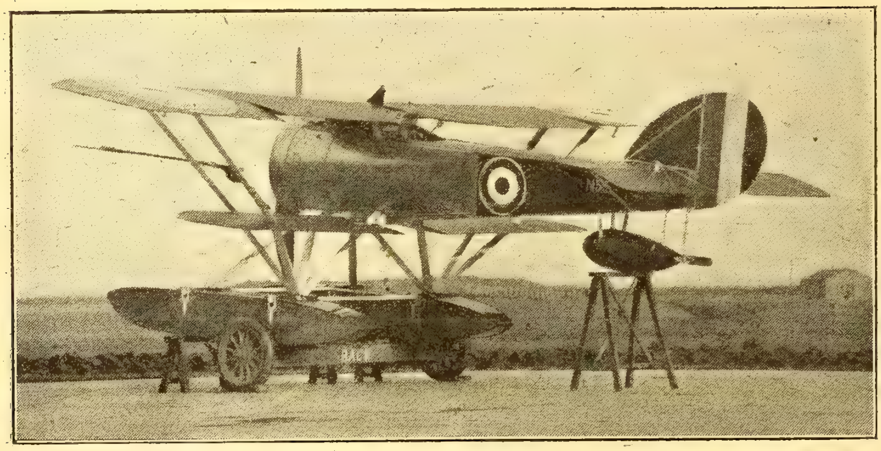
The airscrew proper to the machine suffered in the affair with the barge, and the tests were finally made with an airscrew from a much lighter and faster land scout. On the climb this propeller was highly inefficient, held the engine revs. down, and knocked some three to four thousand feet off the ceiling.

The report of the trials states that it was the best seaplane scout produced till that date, but that it fulfilled no known Service need. It was some little time later that the Brandenburg monoplanes began to take toll of our big flying-boats.

SPECIFICATION.

Type of machine ....Seaplane scout.
Name or type number of machine... .........P.V.9.
Purpose for which intended ...... Fighter escort.


Front View of P.V.9.


Three-quarter Rear View of P.V.9.

Span .... top, 30 ft. 11 in.; bottom, 20 ft. 1 in.
Gap ....4 ft.
Overall length ....25 ft. 2 in.
Maximum height ....9 ft.
Chord...top, 5 ft. 6 in.; bottom, 3 ft. 9 in.
Total surface of wings ....227 sq. ft.
Span of tail .... 11 ft. 6 in.
Engine type and h.p. ......150-h.p. B.R.1.
Weight of machine empty ......1,404 lb.
Disposable load apart from fuel ...300 lb.
Total weight of machine loaded...... ...1,965 lb.
Load per sq. ft. ....8.6 lb.
Weight per h.p. ....13,1 lb.
Tank capacity in gallons ....petrol, 34.5; oil, 6.

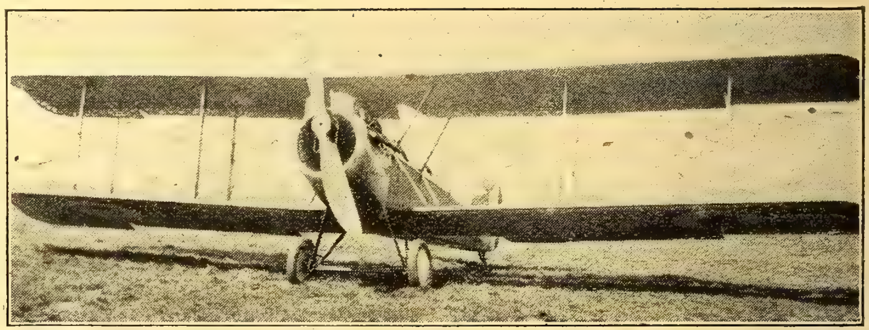
PERFORMANCE—
Speed at 2,000 ft. ....96 knots.
Speed at 10,000 ft. ....*86.3 knots.
Landing speed ....50 knots.
Climb—
To 10,000 ft. ....27 min. 20 sec.

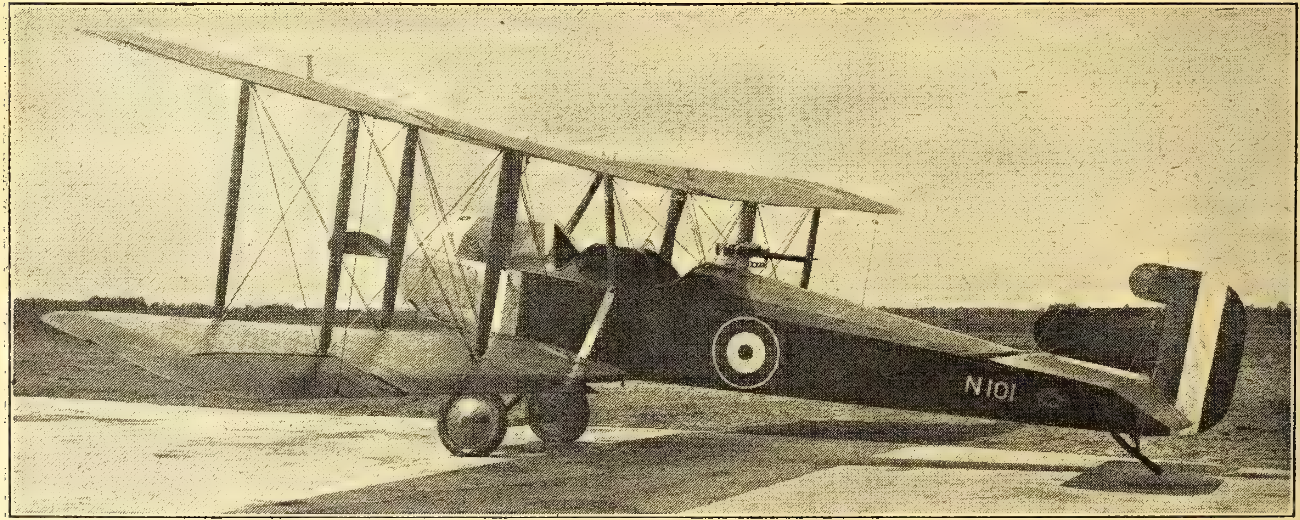
* Great decrease in speed due to engine dropping **revs. over** 2,000 ft.

THE GRAIN GRIFFIN.

Whilst P.V.9 was under construction a 200-h.p. Sopwith single-seater bomber was delivered to Grain with instructions to convert it into a two-seater reconnaissance machine, fitted with folding wings and wireless, for use from aeroplane ships. It was impossible to fly the machine as no radiator was delivered, and the job was to be considered urgent.

Test figures—obtained at Martlesham—were supplied showing an astonishing speed and climb with a very big bomb load, and it was wondered why the


The original Grain "Griffin," with Sunbeam "Arab" engine.



Three-quarter Rear View of the Grain "Griffin," fitted with 230 h.p. B.R.2 engine.

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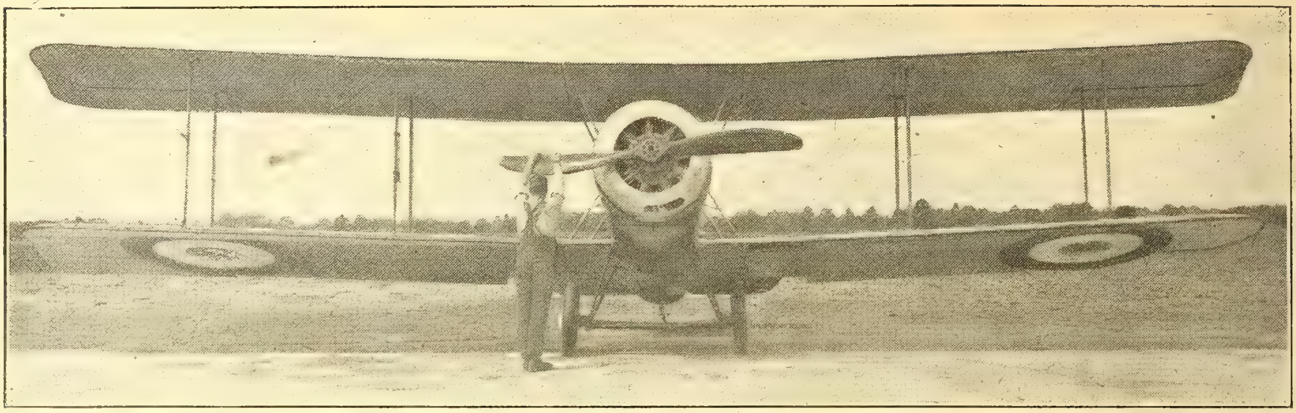


Front View of the B.R.-engined "Griffin."

machine was not used for its designed purpose. Bombers were in demand in those days.

Naturally enough it was found that the conversion was full of snags. The fuselage was too narrow to carry the wireless equipment with comfort, the interplane struts were just in the place to foul the tail plane when folded, and generally the machine indicated that she had no intention of suffering the proposed transformation.

The drawing-office reported that it would be quicker to design a new machine based on the bomber and build that than to carry out the alterations, and that even if altered the job would be but a botch.

They were allowed to design the machine concurrently with making the alterations to the original.

The latter involved reducing the span to bring the struts clear of the tail plane when folded, and when finally tested the altered machine had lost most of its performance, mainly because of the reduced surface involved. The test showed, however, why the machine had been turned down as it originally stood. It was impossible to produce any effect on her by means of the ailerons.

However, six machines of the modified type had been ordered from Port Victoria, and had already been christened as "Griffins," and work was put in hand from the new set of drawings. The wing spar bays had been rearranged so that struts cleared the tail without reducing the span, the fuselage had been widened, and a generally satisfactory job resulted.

A set of wings to the new drawings was rushed through and fitted to the original fuselage, together with a wheel aileron control instead of a stick, and on test the modified machine was found to have regained the lost performance to a great extent.

Lateral control was still deficient, but was adequately secured by fitting balanced ailerons.

The original machines were fitted with 200-h.p. Sunbeam "Arab" engines, but later editions carried 230-h.p. B.R.2 engines.

SPECIFICATION.

Type of machine	Folding aeroplane.
Name or type number of machine	Grain Griffin.
Purpose for which intended	Fleet reconnaissance.
Span	42 ft. 6 in.
Overall length	27 ft. 3 in.
Maximum height	10 ft. 6 in.
Chord	6 ft. 3 in.
Total surface of wings	506 sq. ft.
Engine type and h.p.	Arab Sunbeam, 207 h.p.
Weight of machine empty	1,911 lb.
Disposable load apart from fuel	538 lb.
Total weight of machine loaded	2,858 lb.
Load per sq. ft.	5.65 lb.
Weight per h.p.	13.8 lb.
Tank capacity in gallons	petrol, 50; oil, 5
PERFORMANCE—	
Speed at 5,000 ft	100 knots.
Speed at 10,000 ft.	87.5 knots.
Climb—	
To 10,000 ft.	12 min.

So far this completes the tale of Grain-built experimental machines. Whether Grain will ever again produce machines of original design seems doubtful. During the war it did interesting work, and buried in the archives of the establishment there is much useful practical information as to the design of seaplanes.

That this experience was never put to any serious use must be laid at the door of that lack of any enduring policy which has always dogged the naval side of the British Air Service.

(To be continued.)

A FRENCH NOVELTY.

It is now possible to publish a brief outline of the Damblanc and Lacoin "Alerion"—a kind of hybrid between an aeroplane and a helicopter, to which a guarded reference was made in THE AEROPLANE some months ago.

In its general lay-out the machine is a monoplane of the normal type with the wings replaced by a pair of four-bladed rotating lifting screws, with their axes lying on a line passing through the centre of gravity of the machine. These are carried from the fuselage in such a way that the inclination of their vertical axes may be altered at will by the pilot.

The angle of each blade can also be varied at will, whilst the blades are in motion, not in the manner usually associated with the variable pitch propeller but according to the exact position of the blade at any time.

Thus each blade as it passes a determined point in its path may have its incidence increased to a definite extent, and then reduced again. In this way each blade as it enters into, say, the port half of the circle in which it rotates gains an increased angle of attack and effectively the port half of that particular screw has a greater lift than the starboard half, and therefore the effective centre of lift of that screw moves towards the port side and the machine tends to bank up accordingly on that side. This both lateral and longitudinal control can be effected.

In addition to this control the machine is fitted with elevators and a rudder at the tail as in the normal aeroplane.

The four blades of each screw are built in the manner of the usual aeroplane wing, with wooden framework and fabric covering. Two engines are fitted, coupled together and clutches are fitted between the engines and the screws, or rotating wings as they properly are called.

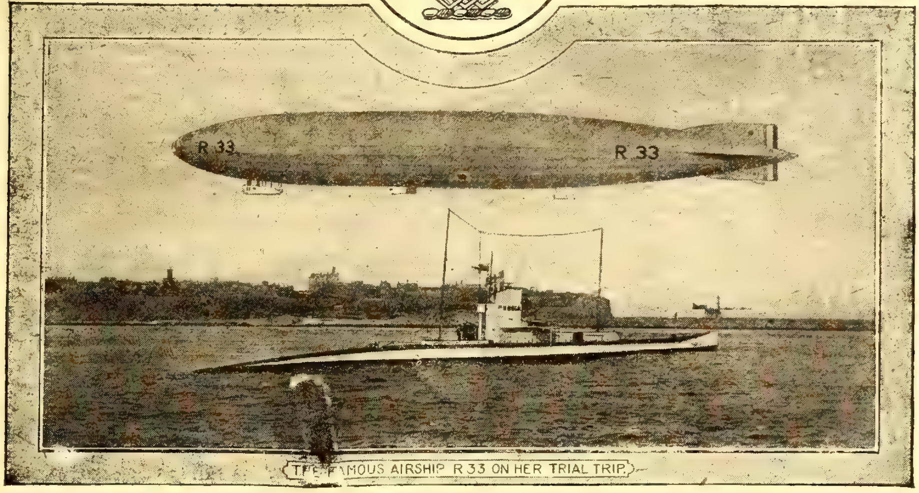
Climbing is to be achieved by the direct lift from the rotating wings, and horizontal motion is gained by inclining the axis of the rotating wings forward, thus producing a forward component of the thrust.

Descent may be made either under power, by throttling the engines till the thrust is less than the weight, or with engines off, and with the incidence of each blade of the rotary wings reversed, when descent occurs in a manner clearly explained by Mr. M. A. S. Riach in THE AEROPLANE of March 19th, 1919. This descent may be either vertical or combined with a motion of translation according to the inclination of the axes of the rotating wings.

It is stated that the experimental machine—which is to be tested next month—has been built to the order of the French Government and that they have advanced a large sum to defray the cost of the experiment.

THE ZENITH CARBURETTER.

The popularity of the Zenith carburetter is, of course, known to every motorist, but the extent of it is perhaps hardly realised. In the issue of Nov. 1st the "Autocar" gives a list of 129 different types of cars manufactured in the United Kingdom. No fewer than 78 of these are fitted with Zenith carburetters. Of the remaining 51 types, seven use the manufacturer's own carburetter, nine do not specify a type of carburetter, and the remaining 35 types of cars divide amongst them 10 other makes of carburetters on the market. The figures tell their own story of the popularity of the Zenith.



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AMONGST THE ACCESSORIES AT OLYMPIA.

Amongst the accessories on view at the Olympia Show are many which have a direct or indirect interest to the Aircraft Industry, either because they are of actual use in that Industry, or because they are the products of firms that have contributed to the development of that Industry.

Owing to the extreme difficulty of seeing anything beyond the back of other people's necks at Olympia, the following notes on such articles are by no means complete.

Brown Bros.—At Stand 236 Messrs. Brown Bros. exhibited a colossal number of fitments of all kinds calculated to assist the automobilist in his pastime. Many of these are of direct use for purposes aeronautical, and a number of them—such as the Glow Warm Gloves, the Boyce lightning valve connector, and the Tapp petrol pourer—have been described in these pages.

The Brolt dynamo lighting and starting outfit handled by this firm is an extremely interesting affair, and it should not be impossible to apply it almost unmodified to the lighting of commercial aircraft.

Serck Radiators, Ltd.—This firm—late the Motor Radiators Manufacturing Company—of Warwick Road, Birmingham, are well known as manufacturers of radiators for aircraft, and exhibited on Stand 338 a very fine selection of radiators for cars.

H. M. Hobson, Ltd.—Claudel Hobson carburetters admittedly did their "bit" towards winning the war in the air, and since the war they have assisted at both the aeroplanes and the airships crossing of the Atlantic, and have to their credit that they vaporised upon the machines taking the first three places in the "Aerial Derby" of 1919. Samples of carburetters for all purposes, together with several varieties of Hobson Plugs, were shown by H. M. Hobson, Ltd., 29, Vauxhall Bridge Road, S.W., on Stand No. 207.

Barimar, Ltd.—The art of welding has had many applications in the realms of aeronautical engineering—and amongst welders Barimars, Ltd., undoubtedly hold a premier place. On Stand 296, those who are interested in welding—be it merely regarded as a mysterious process capable of inexplicable miracles or as a practicable method of saving money—found very much to instruct them. Barimars are amongst the firms who think, and their habits engender thought.

In addition to exhibitions of apparently impossible repairs accomplished by welding, they exhibited examples of machining and sheet metal work of the highest class.

S. Smith and Son (M.A.), Ltd.—Smith and Sons have a name dating to well before the birth of either motoring or aviation as the makers of instruments of precision. When it is considered that a very poor watch is accurate to 0.07 of one per cent., and that one of Messrs. Smith's watches in the possession of the present writer has maintained a mean accuracy thirty times greater than this for fourteen consecutive years, one feels that a Smith instrument may be considered reasonably reliable.

On Stand 345 a full range of the appliances developed by the motor accessories branch of this firm were shown.

The K.L.G. Plug—by no means a rare attachment to aero engines—is handled by this firm, and takes a high place amongst the benefits conferred upon motoring by its younger sister, aviation.

The firm also specialise in instruments for aviation purposes—though these were in little evidence on this occasion.

C. C. Wakefield and Co., Ltd.—Wakefield Lubricants of one brand or another—more particularly "Castrol R"—did their fair share towards bearing the heat and burden of war in the air. All the lines of oil and grease marketed by this firm were displayed upon Stand No. 290.

Benton and Stone, Ltd.—The Enots cork disc seated petrol valve is one of those accessories developed in response to the war-time needs of aircraft, and which is now available for use in more extensive fields. On Stand No. 266 these and numerous other products of Messrs. Benton and Stone, mostly more directly of automobile import, were found in great variety.

Auster, Ltd.—Auster Triplex windscreens have in the past added to the comfort and the security of many a pilot and observer, and will continue so to do till flying as we know it is a thing of the past. Auster screens of many varieties adapted to the more mundane pursuit of motoring, and displaying the excellence of workmanship and finish which have always characterised their aero screens, were shown on Stand 293.

Leo Ripault.—In the early days of flying, when the Gnôme engine was the engine of every designer's desire, Oleo plugs were the inevitable accompaniment of the satisfaction of that desire. To-day, though the Gnôme is no longer the only engine, Oleo plugs preserve their reputation for excellent service under the most trying conditions. On Messrs. Leo Ripault's stand, No. 353, Oleo plugs suitable for all types of petrol engines were found, together with other accessories of an equally high grade.

R. W. Coan.—When Mr. Coan began to circulate his famous statement, one who had many occasions to grope in the interior of aircraft fuselages was heard to remark that he wished Coan had cast the crankcase of the engines installed therein. Whether Mr. Coan's habits have or have not been responsible for the general decrease in the amount of filth usually associated with this part of the internal combustion engine's anatomy or not, there can be little doubt that he does know how to cast aluminium, and an inspection of Stand No. 325 demonstrated the fact.

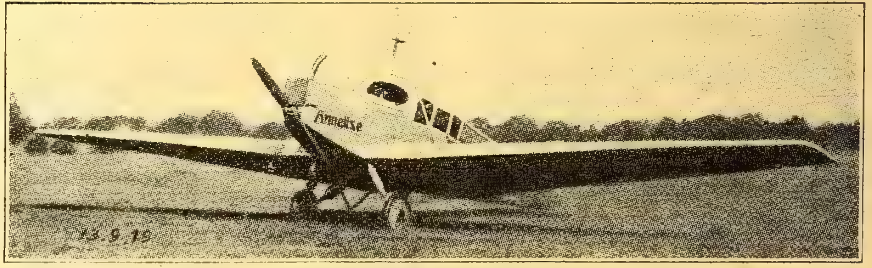
The Vacuum Oil Co., Ltd.—Though petrol is the essential essence of motoring as of flying, these two sports resemble life in that it is their luxuries that make them worth while, and effective lubrication, in one form or another, is the essence of luxury. Thus the products of the Vacuum Oil Co., which are specialised to lubricate all but the human type of mechanism, are of the greatest interest.

Palmer Tyres.—Pneumatic tyres appertain rather to the domain of aerostatics than of aerodynamics, yet many a pilot has cause to thank the qualities of the Palmer tyres which have sustained him in that interval which elapses between the condition of aerodynamic support and an undisturbed motion in a straight line on terra-firma. Palmer cord tyres as applied to the lordly Rolls-Royce or other mere terrestrial vehicle are but a fortified edition of their aero brethren and their shrine at Stand 186 should have been the object of veneration on the part of all ex-quirks.

The British Thomson-Houston Co., Ltd.—Amongst those firms who came to the rescue of the British aero engine industry when an absence of magnetos threatened its extinction the B.T.H. Co. hold an high and honourable place, and one wishes them every success in their endeavours to extract from the motor manufacturing industry an adequate return for the expenses which they must have incurred in developing this branch of their activities. On Stand No. 326 examples of this brand of their wares were exhibited in an extremely attractive form, and those who are interested in the principles of magneto construction found this exhibit worthy of close attention.

PEACEFUL PENETRATION.

The accompanying photograph shows the All-Metal cantilever wing Junker Fokker monoplane adapted to the purpose of peaceful penetration. The cockpit has accommodation for two pilots, and in the enclosed cabin there are comfortable seating arrangements for six passengers. A machine of this type was forced to land by darkness near Dvinsk whilst attempting to fly from Berlin to Moscow and fell into the hands of the Lithuanians.



Junker Fokker Limousine.

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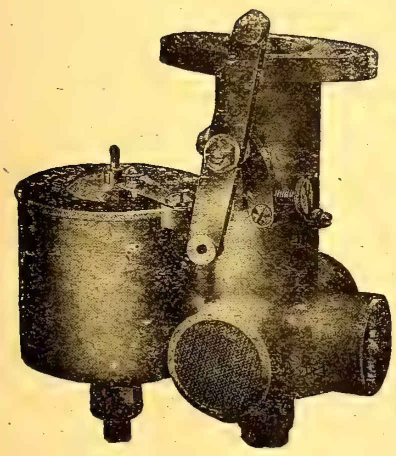

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80 h.p. CLERGET
170 h.p. SUNBEAM AMAZON
110 h.p. LE RHONE
200 h.p. SUNBEAM ARAB
100 h.p. SUNBEAM DYAK
150 h.p. B.R.1
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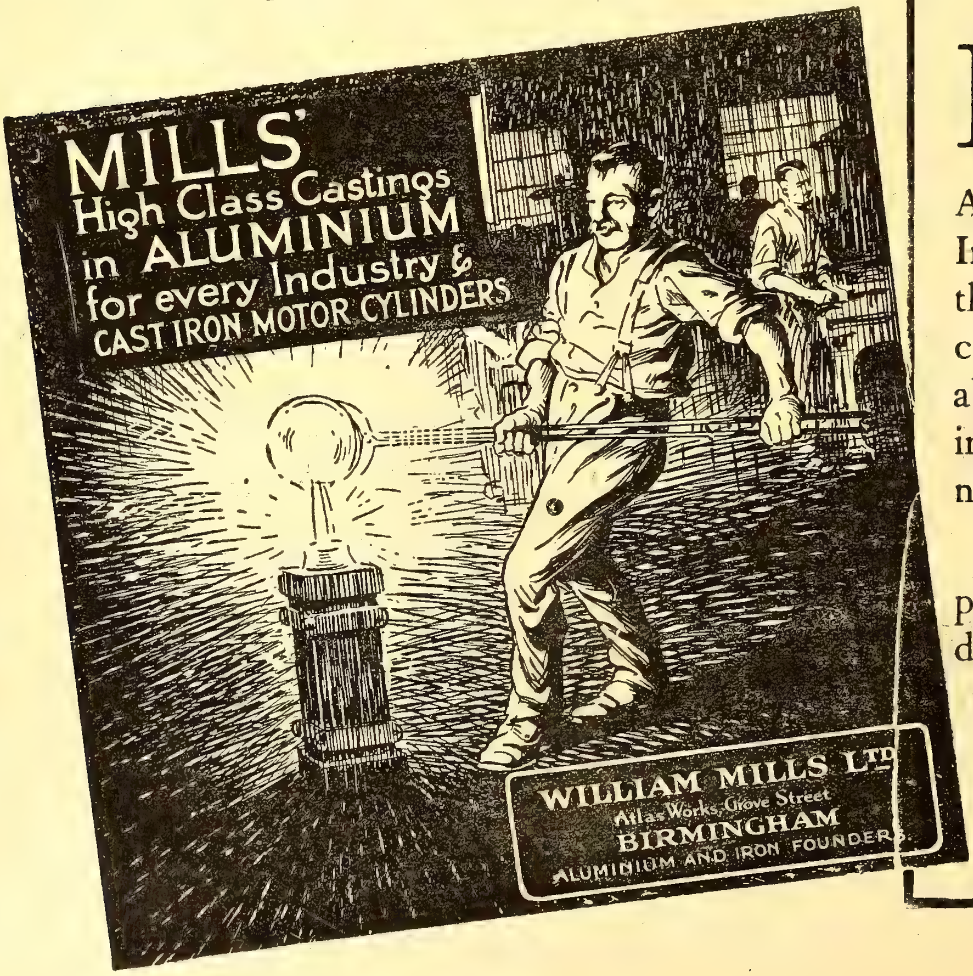
IMPORTANT.—NOTE CHANGE OF ADDRESS from York House, Kingsway, to EARL'S COURT, as above.

NOTE.—For further particulars of other Government property for sale see "SURPLUS," price 3d., at all bookstalls; or by quarterly subscription of 2s. post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.



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GREAT BRITAIN.

THE DEPARTMENT OF CIVIL AVIATION.

A White Paper has been issued by the Air Ministry entitled, "Synopsis of Progress of Work in the Department of Civil Aviation (May 1st, 1919, to Oct. 31st, 1919)."

This can be purchased through any bookseller or directly from H.M. Stationery Office, Kingsway, W.C.2.

The subject of this paper will be dealt with in a future issue of THE AEROPLANE.

CIVIL AERODROMES.

The Air Ministry announced on November 10th that the following list is issued as a supplement to the lists issued on November 8th, 1919, and in addition to or amendment of those previously published:—

LIST E.

(Stations no longer in use by R.A.F.)

These stations have been passed to the Government Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing grounds in the immediate neighbourhood.

Aerodrome	Nearest Railway Station.	Nearest large Town
Leighterton	Tetbury	Stroud
Lopcombe Corner	Grateley	Salisbury
Rendcombe	Foss Cross	Cirencester
Southport	Hesketh Park	Southport
Turnhouse	Turnhouse	Edinburgh

RAILWAY STATION MARKING.

The Air Ministry announced on Nov. 12th that the following "Notice to Airmen" is issued:—

"The roofs of the following railway stations are now marked with the name of the place in large white letters:—

REDHILL.—(S.E. and C. Railway.)
TONBRIDGE.—(S.E. and C. Railway.)
ASHFORD.—(S.E. and C. Railway.)
HITCHIN.—(G.N. Railway)."

LOG BOOKS FOR CIVILIAN AVIATION.

The Air Ministry announced on Nov. 14th that, pending the production of aeroplane and engine log books conforming to the International Air Convention, log books of the type used by the Royal Air Force are on sale at 2s. net per copy. These can be purchased through H.M. Stationery Office, Westminster, S.W., or through any bookseller.

Log books conforming more closely to the requirements of the International Air Convention will be placed on sale as soon as possible.

A POSTPONED VISIT.

Major-Gen. Sir F. H. Sykes, G.B.E., K.C.B., C.M.G., has been unavoidably compelled to postpone his visit to America.

THE BERKSHIRE AVIATION CO.

The Berkshire Aviation Co., which came into existence early in May this year, was formed primarily for exhibition and passenger flying, and, in that capacity, has been giving demonstrations in most of the Midland and Southern County towns.

The personnel are all ex-Service people. Mr. J. D. V. Holmes, late R.F.C., served in France with No. 19 Squadron, and in May, 1917, was shot down and taken prisoner, remaining in Germany until repatriation last December.

When demobilised he went into partnership with Mr. Alan Cobham, another ex-R.F.C. Officer, who was three years with the Artillery of the Lahore Division of the Indian Army in France and Flanders, before being transferred to the Royal Flying Corps—in which he was an instructor.

Mr. Fred Holmes, late R.N.A.S., is another partner. He was with Messrs. A. V. Roe and Co. for three years before the war, and accompanied Mr. Raynham in the latter's famous "Daily Mail" seaplane tour round Britain.

The machines used are 110 h.p. Le Rhône Avros, with two passenger seats. So far, they have visited nearly 30 different places, including Oxford, Swindon, Reading, Northampton, Bedford, Leicester, Loughborough, Nottingham, Derby, Stoke-on-Trent, Chesterfield, Leamington Spa, Rugby, Coventry, Shrewsbury, and Kidderminster. During the week ending Nov. 16th they were to fly at Bradford.

The Berkshire Aviation Co. have given flights in conjunction with the "Daily News," "Nottingham Journal" and "Nottingham Evening News," and claim the World's record for any single machine of this type by having carried nearly four thousand passengers this season.

THE CONTINENTAL AIR SERVICES

THE AIRCO SERVICE.

During the past week ending Nov 15th the weather has continued to be unfit for flying. Out of 181 scheduled flights 159 have been accomplished. Twelve have been prevented, and seven interrupted by the weather. Three have been interrupted by mechanical defects.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Nov. 10th	D.H. 4a	Lt. McMullin	12.30 p.m.	Landed Hounslow 12.45 p.m.			Mail 8 bags
Nov. 11th	D.H. 4a	Lt. McMullin	12.35 p.m.	3.00 p m.			1 and Mail
	D.H 4a	Lt. Campbell-Orde			12 30 p.m.	2 40 p.m.	0
	D.H. 16	Lt. Lindley			12.45 p.m.	Landed Kenley 3 45 p.m.	Mail
Nov. 12th	D H. 9	Lt Lawford	12 45 p.m.	3.14 p.m.			Mail
	D.H. 16	Capt. Baylis	1.00 p.m.	3.30 p.m.			4
	D.H, 4a	Lt. Armstrong			12 30 p.m.	3 30 p.m.	1 and Mail
Nov. 13th	D.H. 4a	Lt. Powell	12.30 p.m.	3.15 p.m.			Mail
Nov. 14th	D.H. 16	Lt. Tebbit	12 30 p.m.	Landed in France			Mail
	D.H. 4a	Lt. McMullin			12.30 p.m.	2.45 p.m.	1
	D.H. 9	Lt. Lawford			12.30 p.m	2.45 p m.	0
Nov 15th	D.H. 4a	Lt. Campbell-Orde	12.30 p.m,	L'mpne 1 20 p.m.			1 and Mail

On Nov. 10th, 13th, and 15th, no machines started from Paris on account of adverse weather conditions.

On Nov. 11th the D.H.16, which started from Paris, was forced to descend at Kenley owing to petrol shortage.

On Nov. 14th the D.H.16, which started from Hounslow, was forced to descend twenty miles short of Paris owing to thick fog. The mails and parcels were taken into Paris by road.

Each Airco pilot, flying between London and Paris, now carries with him a list of transport agents in towns on the route both in England and France, whose task it is, should a mail-carrying aeroplane have a forced landing in their vicinity, to take every possible step to see that the mail-bags continue upon their journeys with the least possible delay.

On a telephone message from a pilot, stating where he has alighted, the nearest of these agents will pick up the mails by means of a fast motor-cycle and take them to the nearest railway station, where the next through express will be stopped in order to put them on board. If rail connections are not suitable, then the aerial mail will go on its way by road. In the event of an air-mail pilot having to make a compulsory descent in the Channel, the Lympne Air Station, by telephoning to Dover, will be able to send out a relief patrol boat in a few minutes. Both the Airco air-mail machines and the bags containing the mails are fitted with a special flotation gear.

THE HANDLEY PAGE SERVICE.

A machine flew from Paris to London on Nov. 11th with passengers and freight, passing through thick fog when over the Channel. Another Handley Page machine flew from London to Brussels with three passengers, 1,069 lb. of freight, and a large model of a Handley Page aeroplane, which is to be exhibited in the Belgian capital. The machine which left London for Paris returned after several ineffectual attempts to penetrate the fog over the Channel.

On Nov. 12th a machine left Hounslow for Paris at 11.25 a.m. carrying one passenger and 240 lb. freight. A second Handley Page biplane left Hounslow for Brussels at 12.20 p.m. with 1,829 lb. of freight. A machine returned from Brussels, starting at 10.50 a.m. with one passenger. Hounslow was reached at 1.50 p.m.

During the week ending Nov. 12th twenty passengers and 779¾ lb. of freight were carried on the London-Paris service. On several occasions the machine started from Hounslow fully loaded, but had to turn back at the Channel after several ineffective attempts to penetrate low clouds and fog.

During the same period ten passengers and 2,969 lb. of freight were carried on the London-Brussels air service.

On Nov. 14th the machines carried out their scheduled flights despite very severe snowstorms. Lieut. MacIntosh flew from Paris to London with passengers and freight in 3 hr. 28 min., and Lieut. Hope arrived from Brussels after a journey of 3 hr. 15 min.

Since the restrictions on the carrying of goods to Belgium have been removed large quantities of freight have been carried, including women's dress, crepe de chine tea-gowns, boudoir caps, feathers and furs.

The unique view of the Flanders battlefields which is enjoyed by travellers on the London-Brussels air service has resulted in many passengers making the journey in order to view the Ypres salient, the shell-scarred area of the Menin Road, the battered town of Menin, and the picturesque cities of Ghent and Bruges.

As soon as Customs offices have been erected Cricklewood Aerodrome will be the departure and arrival centre for the Handley Page aeroplanes carrying out air services between London, Paris, and Brussels. Searchlights and flares have been installed for night-flying.

BRIGHTON.

The Rev. S. Stanley Shergold, describing in a sermon how Sunday is spent in Brighton, said:—

"There is an enormous amount of absolutely unnecessary and unprofitable labour which is of great detriment to the bodies and souls of our fellow townsmen."

Mr. Shergold went on to allude to what he described as the prostitution of the day for great gain by panderers to the taste of the public. There was an aeroplane company, with a local aerodrome, which regarded Sunday as the day par excellence for joy-rides.

It might be suggested that Mr. Shergold's habit of prostituting the same day to pander to the public's partiality for piffling platitude of the above character has also the incentive of gain—though one must infer that his gains are not great.

The Rest Day Association is appealing to the East Sussex County Council to stop the Sunday flying at West Blatchington, on the ground that it constitutes "an affront to the religious feelings of the people."

BROOKLANDS.

The manufacturers of the A.B.C. aeronautical engines are Walton Motors, Ltd., and not the Walton Motor Car Co., as erroneously stated in last week's issue of THE AEROPLANE.

EDINBURGH.

On Oct. 25th Aitken, Melrose and Co., Ltd., of Forth Street, Edinburgh, delivered supplies of tea to Dundee firms by air. The machine, an Avro biplane named "The Advertiser," was loaded at Turnhouse Aerodrome. The pilot was one Lieut. Jones, and the flight to Lochee Park, Dundee, was made in 30 mins.

Lord Provost Sir William Don, the town clerk, and magistrates of Dundee were present when the aeroplane arrived, and each was presented with a casket of tea to commemorate the event. The remainder of the tea was delivered to the local agents by motor-cars.

HULL.

The North Sea Aerial and General Transport, Ltd., has in the last few months flown machines between London and Glasgow, Liverpool, Leeds and Hull, and given displays at Scarborough and Amsterdam. The company has also carried goods and passengers between Hull and the Continent.

In the last three months over 400 successful flights have been made with a total approximate mileage of 12,000 miles. Just short of 2,000 passengers were carried, and over 12,000 lb. of goods. This work was performed without a single accident of any sort either to passengers or machines. The machines used were of the Blackburn "Kangaroo" commercial type.

LONDON.

Vickers, Ltd., write that during the past summer they have undertaken certain commercial services, in particular a service of three or four machines which visited some of the principal towns in England.

The firm think, therefore, that the position is more hopeful than would appear at first sight. An interest has been created and the public is really only waiting for practical services to be initiated between points carefully selected from the point of view of aviation.

At the E.L.T.A.—The Queen-Mother of Holland visiting the Vickers Stand at the E.L.T.A. at Amsterdam.

The heavy depreciation of rolling-stock, the shortage of shipping, and the scarcity of motor transport, caused principally through the exigencies of the war, are all in favour of the early development of civil aviation. Aircraft manufacturers are faced with the task of converting the impetus they received during the war into a healthy peace industry.

The firm expects that several years will elapse before the very best types of machines have been evolved, which will require both scientific study and practical experience, and therefore during this period the various works will of necessity not be producing at their maximum capacity.

The firm have also to examine into the correct relation of the aeroplane and the airship. In view of these facts they are directing a proportion of their energies to other kinds of manufactures, although they are in the fortunate position of having a large contract for machines recently received from China.

HOUNSLOW.—A Mr. Willars Peterson was a passenger on the belated Cunarder "Mauretania," and was due in Copenhagen before the liner reached England. He sent a wireless message while in mid-Atlantic to his representative in London to arrange for an aeroplane to convey him to Denmark. The representative communicated with the Lep Aerial Travel Bureau, who arranged with Lieut.-Col. G. L. P. Henderson, M.C., A.F.C., to make the flight.

Mr. Petersen arrived in London on the night of Nov. 10th and was introduced to Col. Henderson, and it was arranged that a start should be made at 6 o'clock on the next morning. They started on the Armstrong-Whitworth machine belonging to Col. Henderson on Nov. 11th for Copenhagen, but a landing had to be made at Hamburg in the evening owing to a snowstorm.

On November 15th Lieutenant Lindley, piloting an Airco D.H.9a, left Hounslow at 12 noon with one passenger *en route* for Brussels, but owing to extremely adverse weather conditions was compelled to alight at Lympne.

NORTHOLT.—Miss McMaugh, an Australian nurse, after only a month's training, successfully passed her tests at the Central Aircraft Company's Aerodrome at Northolt on Nov. 15th, and received the Royal Aero Club's pilot's certificate. She flew a Centaur IV machine, designed and constructed by the Central Aircraft Company.

Miss McMaugh has been working as a Red Cross nurse in France, attached to the A.I.F. It is claimed that she is the first Australian woman to take the certificate, and the first woman in England to become a pilot since the outbreak of war.

SHEFFIELD.

A correspondent to the "Yorkshire Observer" of Nov. 7th writes:—

"The rumour that two of Sheffield's largest engineering

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is mainly a question of organisation and *choice of flying stock.* As to the second factor, the B.A.T. Company can be of unusual assistance.

For instance, we are the first people out with a purely commercial model (not a modified war type)—the B.A.T., F.K.26—the machine with the largest cargo space and load capacity for its overall size and power yet produced.

Here are some interesting points concerning F.K.26 :—

ENGINE :—Rolls-Royce Eagle VIII.

SPEED :—45-120 m.p.h.

CABIN :—Is clear of any transverse cross bracings or other obstruction, and measures 8 ft. by 3 ft. 3 ins. by 6 ft.—this in a machine of only 33 ft. overall length. Direct entry off ground through ordinary door.

LOAD : —With 600 mile range of fuel —2,000 lbs.

FUEL COST AT FULL LOAD :- 7·2 pence per mile.

CHASSIS :—A sturdy job, sprung by an unique combination of oleo and rubber shock absorbers.

TAIL :—Can be trimmed in flight from pilot's seat—steering and practically unbreakable tail skid.

GENERAL CONSTRUCTION :—Straightforward — simple to repair and recondition.

A series of these machines is in production. Governments and prospective owners desiring a fleet of these machines—or a single one—are invited to forward their enquiries.

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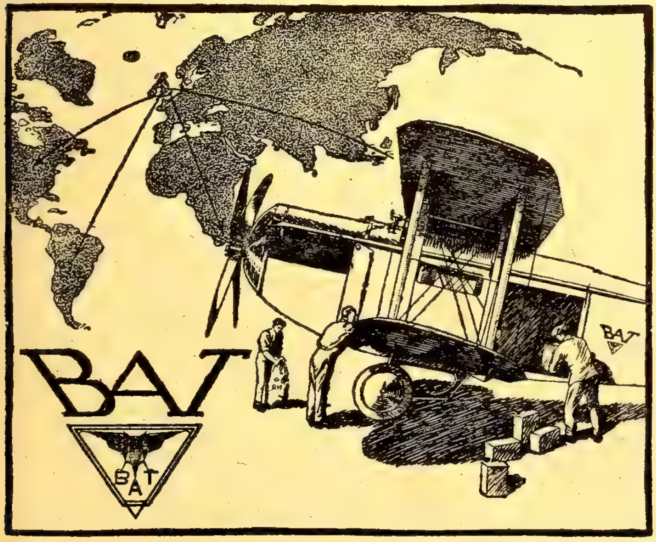

The
BRITISH AERIAL TRANSPORT CO. LTD.
38, CONDUIT STREET, LONDON W. 1.

Miss H. McMaugh, who recently took her certificate at the Central Aircraft Co.'s School at Northolt.

firms had been negotiating for the purchase of the Coal Aston Aerodrome is supported by the latest development.

The Corporation, it is authentically stated, has been asked by the Air Ministry if it is prepared to take over the aerodrome as a municipal aerodrome for the city.

"The Development Committee urges that the retention of the aerodrome is of the utmost importance, and has decided to call a conference of local manufacturers to consider the matter, in conjunction with the question of promoting a regular air service to and from Sheffield."

Weston-super-Mare.

The Urban District Council, advised by the Sands Committee, have refused a renewal of flying rights from the sands for next year to A. V. Roe and Co., Ltd., and a similar concession to the Warwick Aviation Co.

More than 3,000 passengers were carried by A. V. Roe and Co., Ltd., in the past summer. The Golf Club object to the flying on account of the damage done by crowds, etc. Certain residents also object to the aeroplanes flying over their houses. It is said that there is a general desire on the part of the public for a continuance of the flying, but the Council is reactionary and unenlightened.

SOUTH AFRICA.

Mention was made of the amalgamation of two aeronautical companies in the Nov. 5th issue of The Aeroplane. Further details of the officers in the new company have now been obtained.

One of the Chiefs of South African Aerial Transports, Ltd., is Colonel R. S. Armes, C.M.G. Latterly, he was an Air Council representative in the British Section of the Supreme War Council at Versailles, and a Chief Staff Officer in the Department of the Inspector-General, R.A.F.

Col. Armes has passed through the Staff College at Camberley and the School of Economics, London University. Since 1914 he has been a Company Commander, a Staff Officer at Headquarters, 2nd Army, on the Staff of Air Vice-Marshal (then Colonel) Sir J. M. Salmond, and in the Directorate of Military Aeronautics.

Major Allister Miller, D.S.O., is another of the Chiefs. He made the first cross-country flights in South Africa in a recruiting campaign for the R.F.C. On his return to England, Major Miller was selected as an officer in the Independent Force, fighting squadron, and shortly before the Armistice was flying a Sopwith "Snipe" machine.

Major F. W. Honnet joined the R.F.C. in 1915, graduated as a pilot in Jan., 1916, and proceeded to France with 24th Squadron. He afterwards became a Flight Commander, a Brigade Fighting Instructor, and a Home Defence Squadron Commander. It is claimed that Major Honnet was the first pilot to fly a Scout machine (a "Camel") at night. At Stonehenge he underwent a special Navigation Course, with a view to pioneering on the Cape to Cairo route, but owing to ill-health he had to give up the project.

Major W. E. Young, D.F.C., served as an observer and pilot in the R.F.C. on the Western Front. He commanded No. 1 Squadron in France, and, after the Armistice, a Handley Page Squadron employed on an Aerial Mail Service between Boulogne and Cologne.

Lieut. C. R. Thompson, D.F.C., was one of Major Miller's pupils.

Lieut. L. E. Rutherford was also one of Major Miller's pupils, and was for two years a flying instructor in the R.F.C. and R.A.F.

Capt. C. G. Ross, D.F.C., was gazetted Flight Commander in 1918. He was awarded the D.F.C., bar, and Croix de Guerre (Belge), for services on the Western Front.

The following is extracted from the Johannesburg "Star" of Oct. 16th, and relates to information issued by South African Aerial Transports, Ltd. :—

" The circular is something amusing when it sets out to explain 'airisms' for the 'benefit of the uninitiated'—quite solemnly; and quotes five of them : 'Flip,' 'ceiling,' 'stunts,' 'joy-stick,' taxi-ing.'

" I hereby add to the joy-list—it seems so inadequate for instruction or amusement :—

" To suffer from a vertical gust; or, to get the wind up; to have a dud day; to be a Quirk or Hun; to have one's tail up; to hear from old 'Boom'; to have cold feet; to zoom; to lose a prop.; to swing the lead (applicable to A.M.'s only); to call a chap 'old bean' (the password of the Corps!).

" These are but random additions; the full slang dictionary is too long; and some of it is uninkable!"

THE ARGENTINE.

Major S. G. Kingsley is the representative of Aircraft Transport and Travel, Ltd., in the Argentine. The following information is extracted from an article written by him which appeared in the Buenos Aires "Standard" of July 25th :—

The De Havilland biplane which Major Kingsley has taken out to Uruguay is a demonstration machine, with which he hopes to familiarise the country with the idea of utilising the aeroplane as a time-saving and comfort-giving device, to enter into the everyday lives of the inhabitants and increase their business. The first aircraft company to start in the country on properly organised lines will find a very profitable field to develop.

The routes that such a service would cover are frequently visited by cattle buyers and business men from Montevideo. The towns are situated in fertile districts, the development of which are seriously retarded by the lack of adequate communication. After heavy rains it is impossible now to get from one town to another, owing to the flooding of the rivers and the bad state of the roads.

Once aerial transport is established in Uruguay, it will be possible to travel from Montevideo to any point in the Republic, transact business and arrive back in the capital within the day. It will likewise be possible to write a letter in the morning to a client in any part of the country, give him several hours in which to answer it, and receive a reply before the closing hour of the business houses. A buyer of cattle will be able to visit four live-stock breeding centres or fairs in the time it now takes to visit one : in other words, one man will do the work now being done by four.

On July 15th Major Kingsley flew from Buenos Aires to Cordoba. He previously sent a telegram asking that the landing ground might be marked out, but the telegram arrived one hour after Major Kingsley had alighted safely on very bad ground.

On the following day he decided to make an ascent in order to find a spot better fitted for a temporary flying-ground. The race track was chosen, and Major Kingsley was informed that the ground was hard for its whole length. Whilst taking off the machine ran on to a soft patch of loose sand. The left wheel buried itself up to the axle. The machine swerved and ran into a wire fence. Slight damage was caused, but it was not expected that it would take long to put right.

Five more De Havilland machines were expected from England at the beginning of September. One a D.H.16, with 375 h.p. Rolls-Royce engine, and the other four, two-seater biplanes of a light type.

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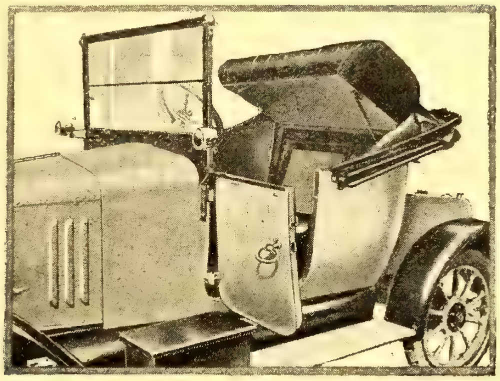

Note the method of packing away the patent side curtains (which open with the door behind the back cushion.

Godbolds R 8.

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DENMARK.

The Danish correspondent of The Aeroplane writes :—

German Designs.

After the landing last autumn in a Danish harbour of a modern Brandenburg sea-biplane, from which the monoplane edition was derived, the Royal Dockyard at Copenhagen built a copy. A 160-h.p. Benz-engined Brandenburg sea-monoplane was also bought from Germany after the Armistice.—H1.

FRANCE.

The Paris-Melbourne Flights.

M. Poulet and his mechanic, Benoit, reached Karachi on Nov. 13th after an adventurous journey. They landed en route, and were promptly attacked by natives, who mistook them for "devils." They were forced to use arms in self-defence. No further news has arrived as to their later movements.

Lieut. Casale in New Work.

Lieut. Casale has left the Nieuport firm and is going to fly on a Breguet limousine biplane to Alexandria, where he intends to open an aviation business.

The Elections.

M. Louis Breguet is standing for the Chambre des Deputés in the Department du Nord. Capt. Fonck, whose prowess in the war needs no new historian, has been elected by the constituents of his native province in the Vosges. Capt. Heurteaux, who is also well known in official aviation circles, has also been elected.

GERMANY.

A New Mail Service.

According to the "Times" of Nov. 14th, an aeroplane carrying the first aerial post from Berlin to Königsberg has arrived at Königsberg after a flight of six hours.

Another "Bodensee."

According to the "Times" of Nov. 17th, the German Aerial Company have placed orders for the construction of a new passenger airship of the Bodensee type.

The Airship "Bodensee."

During the twelve days' suspension of the railways the "Bodensee" is carrying the mails to South Germany and Switzerland. On Nov. 11th the airship left Friedrichshafen for Berlin, carrying twenty-four passengers and 1,760 lb. of mails. After flying some sixty-two miles it encountered a driving snowstorm, but maintained its course, being steered by the compass. The journey of some 437 miles took five hours.

The "Bodensee" left Berlin again on Nov. 12th with a ton of mails and urgent telegrams for the South. The mails by airship reach their destination in six hours, instead of twenty-five or more when sent by the ordinary route.

HOLLAND.

A correspondent writes :—

Proposed Aerodromes.

The management of the international aviation enterprise at Amsterdam has chosen, in concurrence with the Aviation Committee of the Deventer Town Council, a site for an aerodrome on the road between Deventer and Zutphen. It is hoped to begin work on the aerodrome, the erection of hangars, etc., in April next.

Lieut. Aviator L. J. M. Hofstee gave a lecture at Deventer, in the course of which he said that the Government is working out a plan for the institution of an international aerodrome (or, as the Dutch say, "a flying harbour") at Amsterdam, which is to cost six or seven million guldens. The Aviation Law, which is in preparation, said the speaker, will appoint as Customs station the first place in the eastern part of Holland which is ready with an aerodrome.

A London-Hague Air Service.

We hear, says the "N. Rott. Courant," that on the 10th of this month a regular flying service will be opened between Holland and London from some grounds belonging to Mr. Kröller lying on the Maaldrift, near Loosdunier, which is a small place quite close to The Hague.—N. C.

This service is to be run by Aircraft Travel and Transport, Ltd., but did not start on Nov. 10th.

SWEDEN.

117 Miles per Hour.

Lieut. Maddalena, an Italian aviator, flew from Stockholm to Helsingfors on Nov. 10th in 2 hr. 20 min. The distance is about 440 kilometres.

An Italian Gift.

Two Italian seaplanes which were flown to Stockholm have been presented by the Italian to the Swedish Government.

Bridge Flying.

Captain Saunders (late R.N.A.S.), a pilot in the Swedish P.O. Flygkompani, flew a D.H.6 biplane under the arch of a railway bridge near Stockholm on Oct. 27th. Other attempts to fly through this bridge have failed, as the passage is difficult and bordered by high mountains.

It appears that for some days certain Italian aviators had been advertised to fly under the bridge, and as they delayed so long Capt. Saunders proceeded to do it.

The Danish correspondent of The Aeroplane writes :—

Capt. Saunders crossed Skuru Sound by Stockholm. The bridge has a span of 57 metres on the water-line, and is built in a semicircular form with a radius of about 30 metres.

SWITZERLAND.

The Aerial Post.

The aerial post recently maintained between Zurich, Berne, Lausanne, and Geneva ceased on Nov. 1st last.

The Injuries of Capt. Bradley.

Capt. Eric Bradley, who was previously reported to have crashed at Nyon in an Avro biplane whilst flying with a passenger, was still in hospital at Nyon on Nov. 10th. His injuries have been found to be more serious than was reported at first.

UNITED STATES OF AMERICA.

A Reuter message from Mineola, Long Island, dated Nov. 14th, stated that Vice-Admiral Mark Kerr, in a Handley Page aeroplane, left there shortly after 7 a.m. on that date for a non-stop flight to Chicago. He was carrying eight passengers and 1,500 lb. of express mail matter, and estimated that the flight would take ten hours.

The machine was piloted by Major Brackley, of the R.A.F. It was intended to start before daybreak, but the cold weather had chilled the engine and thus delayed the departure.

A Reuter message from Ohio, dated Nov. 16th, stated that the machine made a forced landing at Mount Jewett, Penna, on that date, and was so badly damaged that new parts will have to be obtained from England.

* * *

GOLF AND THE ROYAL AERO CLUB.

The members of the Royal Aero Club held an 18-holes competition over the Addington Club's course on Nov. 18th. The competitors included Lieut.-Col. J. T. C. Moore-Brabazon, Commander W. Briggs, Lieut.-Commander H. E. Perrin (secretary of the Royal Aero Club), Lieut.-Col. F. R. McClean, and Major S. V. Sippe.

OUR CARELESS SECRECY.

Speaking of the war work of Dorman, the celebrated engine makers of Stafford, the "Daily Chronicle," in a short article on the Olympia Motor Show, says : "During the war Messrs. Dorman produced, under the seal of secrecy, the interrupter gear, which enabled machine-guns mounted on an aeroplane to fire between the propeller blades of enemy aircraft."

This is very interesting, but before this wonderful gear was invented, what a time our poor pilots and gunners must have had, relying entirely on their quickness of eye to snipe a Hun through his propeller.

"MANY INVENTIONS."

Sister Hilda McMaugh, the first Australian woman to fly, in an interview to a representative of the "Daily Mail" gave a few experiences of her course of instruction at the Central Aircraft School. She said, "I've only had one mishap; that was yesterday, when a farmer drove a cart right across my landing track and I touched it with a wing. For a moment I though it was all up with the machine, but I pulled the right stick and saved myself. It's all a question of pulling the right stick." One doesn't quite grasp the function of the right stick. Did it withdraw the wing, push the cart out of the way or whisk plucky Miss McMaugh out of the machine into safety by a patent quick-release catapult-cum-parachute device?

ONE USE FOR A WORKSHOP.

A dinner, given on Nov. 11th, at Byfleet, to returned Service men, was held in one of Mr. W. G. Tarrant's aeroplane shops, where the Tarrant triplane was first built. The cloakroom was another shop, and the top half of a wooden fuselage was utilised for placing overcoats, etc., thereon. There appears to be little activity as regards aircraft in this establishment, although the works are large and suitable for construction.—J. F. S.

A CHANGE OF ADDRESS.

The Aeronautical Intelligence Bureau, Ltd., late of Bedford Row, W.C.2, wish it to be noted that they have recently moved into more commodious offices at 50, Jermyn Street, S.W.1, and that in future all communications should be addressed there. The temporary telephone number is Gerrard 1060.

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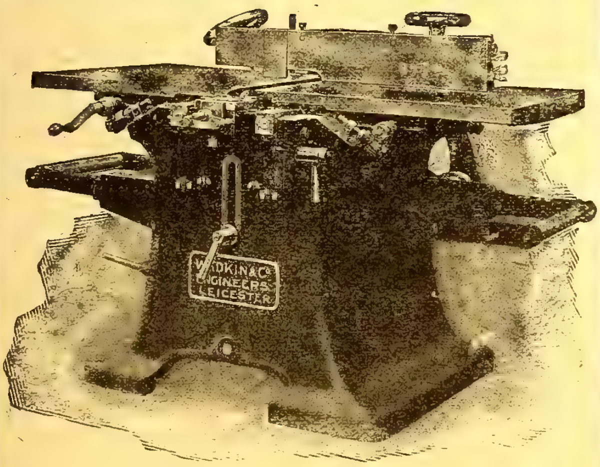

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AIRCRAFT IN PARLIAMENT

The following written answers were given on Nov. 10th :—

ROYAL AIRCRAFT ESTABLISHMENT, FARNBOROUGH (DISCHARGED APPRENTICES).

Viscount **WOLMER** asked the Under Secretary of State to the Air Ministry whether he is aware that a number of lads are being discharged from the Royal Aircraft Establishment, Farnborough, before they have completed their apprenticeship.

Mr. **KELLAWAY** : I have been asked to answer this question. No lads of the apprentice class (excepting nine who were dispensed with as unsuitable) have been discharged, and, in spite of the drastic reduction in the personnel of the Royal Aircraft Establishment, I hope that the necessity for discharging any lads of that class will be avoided. 195 lads have been discharged since the Armistice who were originally engaged as office boys, messengers, etc., but who were subsequently drafted into the shops and given an opportunity of learning a trade.

ORDNANCE SURVEY (AERIAL PHOTOGRAPHY).

Sir A. **BOSCAWEN**, the Parliamentary Secretary to the Board of Agriculture, replying to Lieut.-Col. Moore-Brabazon, said :—The application of aerial photography to peace surveys is being carefully studied by the Ordnance Survey, but at present the process is generally more expensive than normal methods, and less accurate. The Ordnance Survey has full information on the subject, and is in touch with those who carried out air surveys on the Western Front and elsewhere. Some of these officers are now on the Ordnance Survey staff.

* * *

The following oral answer was given on Nov. 11th :—

AIR MINISTRY—MAJOR-GEN. SEELY.

Mr. **BILLING** : Have the Government received the resignation of the Secretary of State for Air? Have any reasons been given for it, and, if so, what? And has the resignation been accepted?

Mr. **BONAR LAW** : I would rather not make any statement to the House on this subject. It is possible the hon Member's information is right. If so, I would rather the statement was made by the Under Secretary for Air himself.

* * *

The following oral answer was given on Nov. 12th :—

AIR SERVICE.

Capt. **WEDGWOOD BENN** (by Private Notice) asked the Prime Minister whether the Government adheres to its pledge to maintain the unity of the Air Service.

Mr. **BONAR LAW** : The answer is in the affirmative.

The following written answer was given on Nov. 12th :—

ROYAL AIR FORCE RESERVE.

Lieut.-Col. **POWNALL** asked the Secretary of State for War whether, in connection with the organisation of the Territorial Force, he will consider the advisability of arrangements being made by which civil aviators can be formed into a branch of the Territorial Force Reserve, in order that their services may be utilised in case of national emergency.

Mr. **CHURCHILL** : No such proposal has been considered in connection with the organisation of the Territorial Force, but the question of the formation of a Royal Air Force Reserve is at present under consideration.

* * *

The following personal statement was made on Nov. 12th :—

RESIGNATION OF MAJOR-GENERAL SEELY.

Major-Gen. **SEELY** (speaking from the Front Opposition Bench) : The House generally wishes to know the reason for the retirement of any of its Members from the Ministry and in a very few words I will endeavour to tell the House the reasons which have impelled me to resign the high position which I have hitherto held.

When the Government was first formed the Prime Minister asked me to go to the Air Ministry, and in a curious phrase, as announced officially, to "preside over the Council." It was a curious arrangement in that the right hon. Gentleman opposite (Mr. Churchill) was to hold the seals of both offices as Secretary of State for both War and Air. It had the obvious anomaly that the Admiralty was left out of the business altogether.

But I accepted it because I had a very deep interest in the Air business for a very long time. Indeed, I was charged by Mr. Asquith, then Prime Minister, with the task of being President of the Committee of Imperial Defence, which laid the foundation of our present Air Service. Also we were not then at peace with Germany, and I thought it my duty to take any office in which one could be of service

It involved, obviously, the dangers of dual control. Dual control is a dangerous thing anywhere, and, as my right hon. friend the Secretary of State for War would be the first to admit, it is peculiarly dangerous in the air.

Nevertheless, I undertook the duty gladly, and endeavoured to work it, but it very soon became apparent that the thing would not work, not for any personal reason, but because by actual fact and by statute the only man who can preside over the council is the Secretary of State. He cannot divorce himself from his responsibility, even if he wishes to do so.

All questions such as these, submissions to the Sovereign, memoranda to the Cabinet, dealings with the responsible heads of other Government Departments, where any question of controversy arises, and, above all, on questions of high policy, must be the duty of the Secretary of State, and of him alone.

As soon as this became apparent I informed the Leader of the House, through my noble friend the Member for Chichester (Lord Edmund Talbot) that the arrangement was bound to be inefficient and wasteful and that I would ask for a change. He begged me to wait until after peace was made with Germany. I accordingly did so.

When the Prime Minister returned in July I then put the case before him, and in very precise terms stated that the present arrangement for the reasons I have shortly given, was one which I thought was not in the interests of the State, and, above all, inimical to the interests of the Air Service, and I asked for a change.

The decision was delayed, first owing to the Prime Minister's absence in France, having a much-needed rest, and then owing to the railway strike. The matter came up finally for decision twelve days ago. The Prime Minister treated me with the utmost courtesy and consideration, begged me to reconsider my position, and finally told me that he had decided on the present plan after due consideration and that he did not propose to abandon it.

The only possible course for me to take, as I am sure the House will agree, whoever of the two of us was right, was for me to resign and be no longer responsible for an arrangement which I was convinced was wasteful and inefficient.

There is no personal question involved. There is no personal question between myself and my right hon. friend the Secretary of State for War. If any man could have done two things he could have done, with his boundless industry. I have never met so industrious a man—and with his care for the Air Service as a whole, than whom it has had no better friend. If any man could have done it he would have done it, but the thing is obviously impossible.

The War Office is a whole-time job, as I have reason to know, and the duty of the Secretary of State for Air—this service, with its vast possibilities—is a whole-time job, too. A man cannot be in two places at once, even if he is the Air Minister. The very fact that the offices are distinct, that the Air Ministry is a distinct office, makes it quite impossible for the responsible head of one to be also the responsible head of the other.

Still less is there any personal difficulty in the Air Ministry itself. I can say truly, and I have had some experience of public life, that never has a man been so faithfully served by loyal and devoted servants as I have been in my position by the members of the Air Council, and especially by Sir Hugh Trenchard and General Sykes, whom I think the State is fortunate in having at the head of their respective Departments.

The issue involved is very clear and very definite and involves questions of vast importance. By deciding as the Prime Minister has done that the Air Ministry is to receive its guidance from its responsible head, from a man who can only give a fraction of his time to it, it seems to me that three certain consequences follow.

First of all, because such a man, however industrious, cannot possibly give enough time to enable business to be efficiently conducted, it must mean delay, and delay must mean waste—waste of time, waste of energy, waste of money. Secondly, the fact that the Admiralty is left out of the business must make it difficult to work in with that great Department.

How can the First Lord of the Admiralty appeal to the Air Ministry for a proper allocation of funds and a proper allocation of energy, with the infinite possibilities of air effort in regard to the Navy, when all the time he finds that the man he is addressing is the Secretary of State for War?

Over and above all, the result of this decision must be that the Air Ministry is condemned definitely to be a subordinate office and an annexe of the War Office, with results, I am sure, inimical to the good of this country. We must be involved in waste of our commercial possibilities. We must be involved in waste of money on a gigantic scale by not taking advantage of the new inventions and of the new power that the air has given us, to enable us to undertake our great and increased responsibilities throughout the world.

If anybody doubts that, let him consider what is the possibility of the air. One aeroplane has saved a war in Arghanistan, and in future aeroplanes may do much more If it be said, on the plea of economy, that it is wise to combine the offices, then I would say that it is wasteful in the extreme.

We cannot possibly hope to maintain our position throughout the world, unless we use science to the utmost, and especially the science of the air. I could no longer consent to agree to a plan which I thought would have these fatal results, and I so told the Prime Minister.

Believing as I do that the result must be a loss of millions of money and thousands of lives, I asked him to relieve me of that duty. He may say that he knows better. He may say that this is the old dispute between brigade headquarters and general headquarters, and that from that there can be no appeal. In that case there is no appeal, but here there is an appeal. There is an appeal to this House, and to this House, accordingly, I appeal.

Lord **HUGH CECIL** : In view of the importance of the statement to which we have just listened from the right hon. gentleman, shall we be given an opportunity of discussing the statement, and the circumstances in which it has arisen, and, if so, on what day?

Mr. **BONAR LAW** : It is not usual, I think, for a Member of the Government to say anything in reply to a personal statement such as my right hon. friend has made, and I should not have done so except for the noble lord's intervention. Since I am on my feet, however, I desire to say, on behalf of the Government, how much we regret that our right hon. friend has found it necessary to resign, but at the same time to say that it is simply a question of difference of opinion; he takes one view and we take another.

As regards time for discussion, we shall, of course, follow the wishes of the House. I cannot name a day, but if there is a desire for such discussion we shall be very glad to afford the opportunity for it.

Mr. **BILLING** : May I ask whether the right hon. gentleman the Leader of the House can say if it is the policy of the Government to appoint another Air Minister?

GENERAL SYKES' MISSION.

Major-General the Right Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., gave a farewell lunch at the House of Commons on Nov. 12th, to Major-General Sir F. H. Sykes, C.B.E., K.C.B., C.M.G., who was about to leave the country on a mission to the United States. Supporting him were the American Ambassador and Air-Marshal Sir. H. M. Trenchard, Bart., K.C.B., D.S.O.

Proposing the health of the American Ambassador, General Seely said General Sykes was about to go to America at the invitation of Viscount Grey in order to confer with the United States people in aviation matters.

The American Ambassador, in acknowledging the toast, said that he rejoiced in the fact that this mission opened up a field of work and of labour which we entered upon together, and in which our co-operation, he thought, might be taken as assured. It was a very generous thing that the British Government should be willing to transfer to the United States one of its best, the largest, and most improved airships.

General Sykes said he went to America to try to help that co-operation which they had met with in France in the air, both actively and in Paris, in connection with the Conference.

Lord Londonderry said that whatever General Seely did in the future, he would always have the affection and goodwill of those connected with the air.

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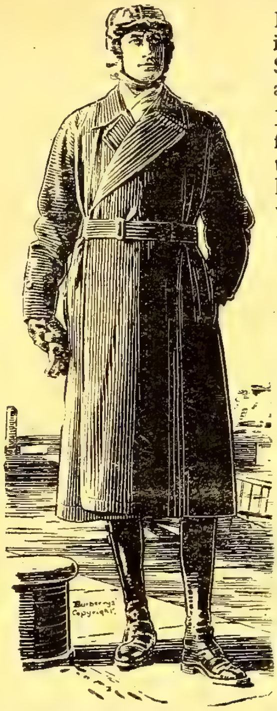

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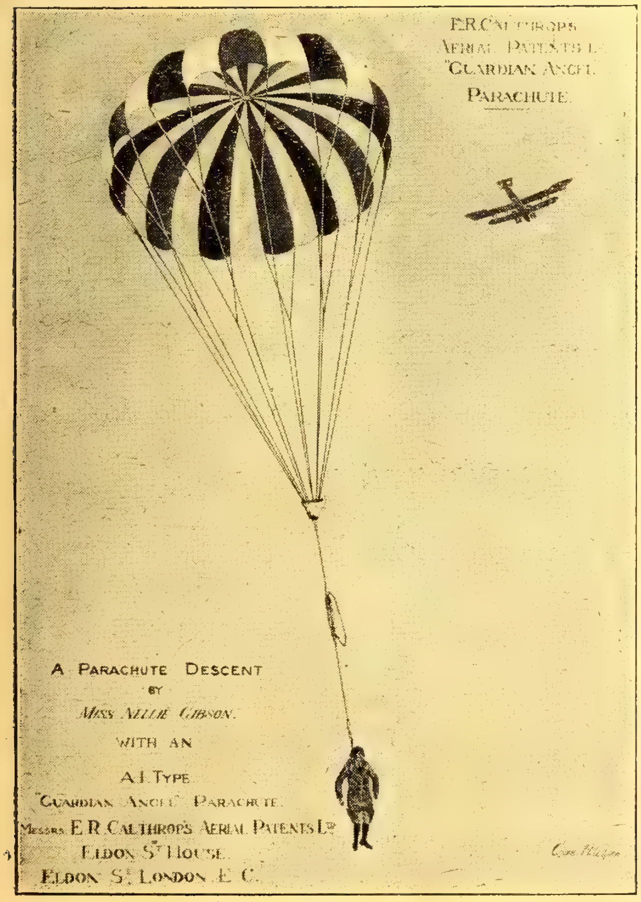

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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

War Office, Nov. 10th.

Territorial Force Reserve.—Yeomanry.—Capt. A. C. Bishop (Lt.-Col., R.A.F.), from Berks. Yeo., to be Capt., Nov. 11th.

War Office, Nov. 12th.

Regular Forces.—Infantry.—Notts and Derby R.—Capt. J E. A. O'Dwyer, D.F.C., is restd. to the estabt., July 25th.

Territorial Force.—R.E.—Tyne Electrical Engrs.—Capt. J. Young is now secd. for service with the R.A.F., April 29th, 1918.

War Office, Nov. 13th.

Regular Forces.—R.E.—Temp. Lt S. J Stocks, from R.A.F., to be temp. Lt., Oct. 30th.

Territorial Force.—Infantry.—5th Bn. Glouc. R.—Sec. Lt. H. B. Smith to be Lt., and to remain secd. (R.A.F.), May 1st.

War Office, Nov. 14th.

Regular Forces.—**Establishment.**—R.F.C.—Mil. Wing.—Gen. List.—C. C. Lotter to be temp. Sec. Lt. (on prob.), Aug. 21st, 1917.

Infantry.—Labour Corps.—Temp Lt. G. Iredell, from R.F.C. (Spec Res.), to be temp. Lt., Feb. 4th, 1918, seny. Sept. 1st, 1917.

THE CASUALTY LIST.

Reported Nov. 12th.

Previously reported Missing, now reported Killed.—Tayler, Capt. St. C. C., M.C., R. Suss. R., attd R.F.C.

Reported Nov. 15th.

Previously reported missing, now reported Killed.—Haynes, Lt. J. L. P., L.N. Lancs. Regiment, attd. R.F.C.

AIR FORCE.

Air Ministry, Nov. 11th.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Nov. 11th. They will retain their seny. in the substantive rank last held by them prior to the grant of the short service commn.

In the case of officers now gazetted Flying Officer from Pilot Officer, seny. will date from the date of Gazette:—

Sqdn. Leaders.—T. S. Impey (A.); J. C. M. Lowe (A.P. (T.)).

Flight Lts.—C. B. Belt, M.C., M.B.E., D.C.M. (Ad.), V. Greenwood (T.), B. D. Hobbs, D.S.O., D.S.C. (S.), H. J. Payn (A.), E. M. Pizey (A.), H. C. Todd (A.), W. D. Wain (T.), R. B. Waite, M.B.E. (S.O.), F. C. Wilkinson (A.P. (T.)), F. R. Williams (T.).

Flying Officers.—E. A Burridge (Ad.), W. Jones (A.), W. M. Long (Ad.), D. S. C. Macaskie (T.), W. G. MacD. Nicholl (T.), E. P. Terry (T.), E. A. Tottle (T.), B. Turner (A.P. (T.)), L. A. Walters (A.).

Observer Officer.—W. J. Umpleby.

Flying Officers (from Pilot Officers).—E. F. Elliott (Ad.), V. S. Holbrook (T.), A. B. Langridge (Ad.), E. J. Newman (T.), C. H. N. Nunn (T.), T. Thomson (T.).

It is intended that officers empld. as Stores Officers or on "Q" duties shall belong to the new Stores Branch when formed. Officers appearing in this "Gazette" who are at present so empld. will be transfd. to this Branch on its formation and will accept these short service commns. on that condition. They will then come on to the rates of pay of that Branch, but will meantime be permitted to draw the higher rates laid down in the new scheme for officers on the General List. Any officer posted to the Stores Branch on its formation will then have the option of declining his short service commn.

The notifications appearing in the "Gazettes" of the dates indicated below, appointing the following officers to short service commns., are cancelled:—Flt. Lt. T. L. Williams, M.C. (Ad.), Flying Officer E. R. Bruce (A. and S.), Flying Officer A. H. Burmann (S.O.), Flying Officer J. W. Milner (A.), Flying Officer R N. Walter (Ad.), Sept 12th; Flt. Lt. T. K. Young (T.), Flying Officer D. B. Robertson (A.), Sept. 16th; Sqdn. Leader H. G. Atkinson, O.B.E. (T.), Flt. Lt. E. R. Pritchard (A. and S.), Flt. Lt. P. C Purser, M.C. (A.), Flying Officer J. Burden (T.), Flying Officer E. H. Colman (A.), Flying Officer C. S. Fulton (S.O.), Flying Officer L W. R. Grubb (A.), Oct. 24th.

The notification appearing in "Gazette" of Oct. 28th appointing Sqdn. Leader J. C. M. Lowe to a permanent commn. is cancelled.

R.A.F.—Permanent Commissions.—The notification in "Gazette" of Aug. 1st appointing the following officers to permanent commns. is cancelled:—Maj. E. T. Newton-Clare, D.S.O. (A.), Maj. V. A. A. Albrecht, O.B.E., M.C. (A.), Maj. F. F. Minchin, D.S.O., M.C. (A.), Capt. A. F. F. Jacob, D.S.O. (A.), Capt. G. L. Hunting (T.), Lt. R. G. St. John, D.S.C. (O.), Lt. J H. Rutherford (T.), Lt. F. Thompson (A.), Lt. A. T. Laing (Ad.).

The notification appearing in "Gazette" of Aug. 22nd appointing Lt. J. W. D. Leigh, M.C. (A.), to a permanent commn. is cancelled.

The Christian names of Sqdn. Leader John Claude Malcolm Lowe are as now described, and not "John Cecil Mansfield" as stated in "Gazette" of Oct. 28th.

The following temp. appointment is made at the Air Ministry:—Staff Officer, 3rd Class.—(P.).—Flt. Lt. R. Addenbrooke-Prout, O.B.E., M.C., Oct. 21st.

The following temp. appointments are made:—Staff Officers, 3rd Class.—(P.).—Flt. Lt. F. B. Beauman, May 31st; (T.) Lt. J. W. Sawyer, April 11th, and to be actg. Capt. until April 30th (substituted for notification in "Gazette" of July 22nd).

Flying Branch.—Sec. Lts. to be Lts.:—(Hon. Lt.) J. S. Arthur, M.C., April 15th, 1918; A. L. Wilcox, Oct. 6th, 1918.

Sec. Lt. D. H. Woodhouse (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), July 28th, 1918.

Sec Lt. E Wallace (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (O.) (Aug. 8th, 1918) (since killed).

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. (Hon. Lt.) R. W. V. Midlane (K.R.R.C.), May 21st; Capt. W. T. F. Holland, A.F.C. (Lt., Lancers), June 5th; Lt. J. C. Preston (Lt., Bedford R.), Aug. 6th; Lt. C. L. Mundey, M.C. (Lt., R. Fus.), Oct. 6th; Sec. Lt. (Hon. Lt.) R. A. Adams (Lt., C. Ont. R.), Lt. (Hon. Capt.) F. H. Eberti (Capt., R.G.A.), Lt. R. A. Grosvenor, M.C. (Capt., Dragoon Gds.), Lt.-Col. A T. L. Nye (Paymr.-Commdr., R.N.), Oct. 16th; Lt.-Col. T. A. E. Cairnes (Capt., Dragoon Gds.), Oct. 17th; Maj. E. H. M. O'Farrell (Maj., R. Irish Fus.), Oct. 18th; Lt. B. D. Collison-Cox (Lt., N. Staffs. R.), Oct. 21st; Lt. C. M. J. Barrington (Lt., D.L.I.), Lt. W. C. Thompson (Lt., R.G.A.), Oct. 23rd; Lt. C. T. Armitage (Lt., Lab. Corps), Sec. Lt. J. H. B. Rygate (Sec. Lt., Dragoon Gds.), Capt. R. J. G. Temple (Lt., R.G.A.), Oct. 28th; Sec. Lt. P. S. Blowey (Sec. Lt., Devon R.), Oct. 30th; Lt. A. H. W. Fleming (Lt., Norfolk R.); Sqdn. Leader (actg. Wing Commdr.) R. Hall, O.B.E. (Capt., Welsh Fus.), Nov. 1st.

Transferred to unempld. list:—Sec. Lt. A. Kitchen, Sec. Lt. V. P. J. Phillips, Sec. Lt. K. B Read, Sec. Lt. T. O. Robinson, Sec. Lt V. J. Zaozkowski, Feb. 1st; Lt. H. N. Barnard, Feb. 13th; Sec. Lt. E. H. Bullen, March 1st; Lt. S. Quayle, March 2nd; Sec. Lt. E. I. Riley, March 6th; Lt. L. H. Smith, March 15th; Capt. J. D. Mackenzie, March 17th; Lt. P. G. Ratliff, March 24th; Sec. Lt. W. Smith, April 8th; Lt. C. F. Campbell, April 19th; Sec. Lt. G. K. Lucas, April 23rd; Lt. (Hon. Capt.) G. E. Lange, June 11th (substituted for notification in "Gazette," July 18th); Sec. Lt. W. P. E. S. Waller, June 10th (substituted for notification in "Gazette," July 15th); Sec. Lt. R G. Ricketts, July 31st; Sec. Lt. A. G. Nicholls, Aug. 6th; Sec. Lt. M. D. Laurenson, Aug. 15th; Sec. Lt. J. H. Hall, Sec. Lt. E. R. Jones, Aug. 29th; Sec. Lt. G. K. Waterhouse, Sept 1st; Sec. Lt. W. D. Redmond, Sept. 3rd; Lt. R. S. Payne, Lt. L. P. Rendell, Sept. 9th; Lt. R. S. Jameson, Sept. 10th; Sec. Lt. F. C. C. Rayson, Sec. Lt. W. Redmond, Sept. 12th; Sec. Lt. G. H. R. Range, Sept. 13th; Sec. Lt. R. H. Rawll, Sec. Lt. T. G. Simpson, Sept. 17th; Capt. T. C. Pattinson, D.F.C., Sept. 18th; Sec. Lt. C. H. Redhead, Sept. 20th; Capt. F. H. E. Reeve, Sept. 22nd; Sec. Lt. A. E. Porter, Sept. 25th; Sec. Lt. H. Lackey, Lt. A. H. Waugh, Sept. 26th; Sec. Lt. C. D. Lang, Lt. O. W. Lang, Sec. Lt. E. W. Langford, Sec. Lt. J. N. Laughlin, Sec. Lt. D. J. Lewis, Sept 28th; Sec. Lt. J. W. Lavoie, Lt. A. W. Voss, Sept. 29th; Lt. E. M. Jenouré, Sept. 30th; Lt. C. H. G. Nida, Oct. 4th; Sec. Lt. R. J. Folland, Oct. 7th; Lt. O. J. Rose, D.F.C., Oct. 8th; Sec. Lt. (Hon. Lt.) D. S. Robertson, M.C., Sec. Lt. S. W. Smith, Oct. 9th; Sec. Lt. J. H. R. Hopkins, Oct. 10th; Sec. Lt. T. P. Knott, Sec. Lt. E. May, Lt. F. Neale, Sec. Lt. G. C. Paish, Sec. Lt. E. Phillips, Oct. 12th; Lt. F. C. B. Greene, Sec. Lt. G. H. Mitchell, Oct. 14th; Sec. Lt W. A. Hammond, Lt. P. Hubbard, Sec. Lt. M. M. Miln, Oct. 15th; Sec. Lt. C. J. Bevan, Lt. H. H. Harman, Oct. 16th; Capt. (Hon. Maj.) C. A. Cutbill, Sec. Lt. G. Dietrich, Oct. 17th; Capt. R. E. Dean, A.F.C., Sec. Lt. J. Millar, Lt. M. K. Macgregor, Lt. W. G. Ryan, Sec. Lt. R. Ridyard, Lt. G. F. Turner, Oct. 18th; Capt. G. M. Boumphrey, Lt. J. J. Fitzgerald, Lt. F. Wright, Oct. 20th; Lt. E. Grayson, Oct. 21st; Sec. Lt. G. E. Dorman, Lt. E F. Haylock, Lt. G. A. Linglam, D.F.C., Sec. Lt. J. H. Manicon, M.C., Lt. G. W. J. Stanton, Lt. E. C. Wuite, Oct. 22nd; Lt. H. W. Allen, Lt. H. C. G. Allen, Sec. Lt. F. I. L. Reis, Lt. R. C. Rodger, M.C., Lt. F. H. Solomon, Sec. Lt. Lt. G. A. Walker, Oct. 23rd; Lt. H. B. D. Harrington, Lt. E. W. Kirby, Sec. Lt. R. H. Matthews, Lt. H. Morris, Oct. 24th; Sec. Lt. S. A. Beck, Lt. C. C. Dews, Sec. Lt. C. E. Gauld, Sec. Lt. (Hon. Lt.) V. W. Helps, Sec. Lt. S. C. Hewitt, Sec. Lt. J. F. M. Phillips, Capt. H. B. Smith, Sec. Lt. H. Stanier, Sec. Lt. F. Steel, Sec. Lt. S. P. Watts, Sec. Lt. C. A. Wright, Lt G. A. Wright, Oct. 25th; Lt W. H. Bolam, Capt. T. Davidson, Lt. D. H. Drew, A.F.C., Lt. I. G. Elias, Sec. Lt. W. E. Everett, Sec. Lt. W. E. Fisher, Lt. D. J. Fleming, Lt. A. P. Freer, Lt. W. C. Gardiner, D.F.C., Sec. Lt. A. J. Garside, D.F.C., Lt. N. U. Harvey, Capt. B. C. Rice, M.C., Lt. (Hon. Capt.) K. R. Simpson, Oct. 26th; Sec. Lt. C. H. Beech, Lt. L Hamilton, D.F.C., Lt. L. L. Leleu, Sec. Lt. C. R. L. Shaw, Oct. 27th; Lt. F. W. Carryer, Lt. A. Daws, Lt. A. S. Girling, D.F.C., Lt. R H. Stocken, Lt. S. E. Sutcliffe, Lt. C. H. Wilkins, Sec. Lt. R. G. Wilkinson, Capt. J. N. Wilson, A.F.C., Oct. 28th; Sec. Lt. (Hon Lt.) C. O'B. Dickinson, M.C., Lt. G. P. W. Earle, Lt. J. E. Ferrand, D.F.C., Sec. Lt. H. C. Howard, Lt. G. Pattinson, Lt. C. C. Reynolds, M.M., Lt. C. D. Spiers, Sec. Lt. C. N. Strong, Lt. (actg. Capt.) G. N. Trace, Sec. Lt. J. E. Way, Lt. G. T. Wix, Oct. 29th; Lt. H. Faull, Capt. G. H. D Gossip, Lt. D. P. Hadow, M.C., Sec. Lt. J. Macintyre, Oct. 30th; Lt. (actg. Capt.) W. J. Butler, A.F.C., Lt. G. H. Clayton, Lt. R. T. Colley, Capt. W. H. K. Copeland, Lt. J. L. King, Lt. H. C. Naldrett, Sec. Lt. H R. Vennard, Oct. 31st; Lt. S. H. Gudgin, Nov. 1st; Lt.-Col. O. H. K. Maguire, D.S.O., Nov. 2nd; Sec. Lt. G. G. Shaw, Nov. 4th; Lt H. E. Sheppard, Nov 7th; Capt. E. C. H. Tebb, Nov. 8th; Sec. Lt. (Hon. Lt.) W. D. Potter, Lt. E. G. K. Weakley, D.F.C., Nov. 10th.

The following Lts. relinquish their commns. on account of ill-health caused by wounds, and are permitted to retain their rank:—R. R. Montgomery (R.A., T.F.), Oct. 31st; H. C. Deeks, Nov. 5th.

Lt. J G. W. March (Sec. Lt., R. Warwick R.) resigns his commn., Nov. 12th.

Sec. Lt. (Hon. Capt.) D Gale relinquishes his commn. on account of ill-health contracted on active service and is permitted to retain the rank of Capt., Nov. 5th.

Lt. W. J. Gleason is dismissed the Service by sentence of General Court Martial, July 18th.

The notification in "Gazette" of May 16th concerning Lt.-Col. G. C. St. P. De Dombase is cancelled.

The notification in "Gazette" of May 16th concerning Sec. Lt. W. J McDonough is cancelled.

The notification in "Gazette" of May 9th concerning Lt. J. A. Harkin is cancelled.

The notification in "Gazette" of Oct. 21st concerning Lt C. L. Mundey, M.C. (Lt., R. Fus.) is cancelled.

Administrative Branch.—Sec. Lt C. P. Sisley to be Lt. (since relinquished commn.), May 13th, 1918 (substituted for notification in "Gazette" of May 6th).

Lt.-Col. (actg. Col.) W. P. Alexander relinquishes his commn. on ceasing to be empld. and is permitted to retain rank of Col., Sept. 1st (substituted for notification in "Gazette" of Aug. 29th)

Lt.-Col. F. H. G. Playfair (Lt.-Col., T.F. Res.) relinquishes his commn. on ceasing to be empld., Nov. 1st (substituted for notification in "Gazette" of Nov. 4th).

Transferred to the unempld. list:—Sec. Lt. W. H. Williams, May 9th; Sec. Lt. J. D. Grant, Sept 2nd; Lt. F. J. R. Weaver, Sept. 3rd; Lt.-Col R. H. More, C.M.G., C.B.E., and is granted hon. rank of Brig.-Gen., Sept. 20th; Sec. Lt. (Hon. Lt.) G. Ryall, Sept. 25th; Lt. H. E. Evennett, Sec. Lt. A. T. Robson, Oct. 9th; Lt. F. A. Gill, Oct. 10th; Lt. C. A. J. Manger, Oct. 11th; Maj. W. J. King, M.C., Sec Lt. (Hon. Lt.) E. J. Leedle, Lt. D. V. D. Thomas, Capt. E. W. Wilkins, Oct. 16th; Sec. Lt. E. Frost, Oct. 17th; Lt. W. G. Nicholls, Oct. 18th; Capt. P. M. Miroy, Oct. 21st; Lt. H. Royston, Oct. 22nd; Lt. H. J W. Fletcher, Capt. S. G. Nicholson, Lt. (Hon. Capt.) W. J. E. Owen, Oct. 23rd; Sec. Lt. (Hon. Lt.) G. Simmers, Oct. 24th; Sec. Lt. C. C. Watkins, Oct. 25th; Lt. J. C. Kinmond, Lt. S. Saunders, M.C., Oct 26th; Sec. Lt. E. V. Evans, Sec. Lt. F. H. Stapleton, Oct. 27th; Sec. Lt (actg. Capt.) J. H. Boyd, Lt. A. W. Grigsby, Sec. Lt. F. C. Hook, Lt. L. N. W. Woods, Oct. 28th; Capt. V. H. E. Langford, M.C., Lt. W. Pilkington, M.C., Oct. 29th; Lt. T. S. Bulman, Sec. Lt. O. E. Fleming, Sec. Lt. W. H. Frame, Sec. Lt. H. Sidebottom, Sec. Lt. G. Storey, Oct. 30th; Sec. Lt. W. E. Cockram, Sec. Lt. W. D. Cooney, Sec. Lt. R W Stoner, Capt. R. J. F. Sulivan, Lt. H. N. Turner, Oct. 31st; Lt (Hon. Capt.) F. Allen, Maj. J. W. F. W. Ashby, Lt. E. W. Burrin, Nov. 1st.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their ranks:—R. T. Jones, D.F.C. (caused by wounds), C. J. Stanfield (contracted on active service), Nov. 5th; Sec. Lt. F. G. Laing relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 5th.

Technical Branch.—Sec. Lts. to be Lts.:—W. W. Scott-Davidson, April 2nd, 1918; F. A. Dickinson (since demobilised), Oct. 8th, 1918; J. E. Tyrrell, March 8th.

Sec. Lts. to be Lts., without pay and allowances of that rank:—P. W.

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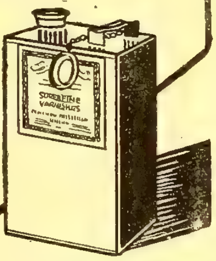

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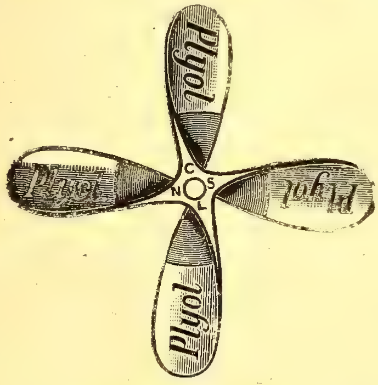

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Renshaw, June 8th, 1918 (substituted for notification in "Gazette" of Dec. 24th, 1918); R. M. Langley, Jan. 16th; H. A. Chapman (since demobilised), Jan. 27th; W. T. O. Cosgrave, May 26th.

Pilot Officer H. P. Strong to be Flying Officer, Oct. 1st.

Pilot Officer F. H. Davis to be Flying Officer without the pay and allowances of that rank, Oct. 1st.

Transferred to the unempld. list:—Lt.-Col. the Hon W. F. Forbes-Semphill, Master of Semphill, A.F.C., Aug. 1st; Sec. Lt. H. Nixon, Sept. 4th; Lt. F. D. Grant, Sept. 5th; Capt. F. W. C. Newton, Sept. 8th; Lt. M'. Leeds-Paine-Reilly, Sept. 10th; Capt. F. Reynolds, Sept. 8th; Lt. A. S. Readwin, Sept. 12th, Lt. A. D. Napier, Sept. 20th; Sec. Lt. (Hon. Lt.) F. M. Rayment, Sept 25th; Sec. Lt. W. N. Formby, Capt. T. K. Young, Oct. 9th; Capt. C. H. Nelson, Oct. 10th; Sec. Lt. R. J. Kelso, Sec. Lt. P. S. Riach, Oct. 11th; Sec. Lt. J. C. Barbara, Capt. N. Turner, Oct. 13th; Capt. G. R. Moody, Oct. 14th; Lt. S. Buckenham, Sec. Lt. A. N. Ramsey, Sec. Lt. G Smith, Sec. Lt. V. Du B. Smythe, Lt. J. I. Thompson, Oct. 15th; Capt. J. Chapman, Oct. 16th; Sec. Lt. P. V. Milner, Oct. 17th; Lt. H. Glaisyer, Capt. W. T. Hanson, Oct 20th; Sec. Lt. A. F. Woods, Oct. 21st; Sec. Lt. W. C. Garner, Oct. 22nd; Lt. A. E. Abell, Capt. H. C. Woodward, Oct. 25th; Sec. Lt. W. C. Burns, Sec. Lt. S. A. Smith, Maj. E. Stokes, O.B.E., Sec. Lt (Hon. Lt.) A. S. Walker, Oct. 27th; Lt. R. E. Hussey, Oct. 28th; Lt. C. B. Hudson, Sec. Lt. P. C. Ingram, Sec. Lt T. H. White, Oct 29th; Lt. R. R. Crosby, Capt. H. Crouch, Capt. E. Dodson, Oct. 30th: Sec. Lt. B. C. Bennett, Capt. F. G. Brown, O.B.E., Lt. E. McR. Cockell, Lt. C. L. Gandy, Lt. A. G. Ridgon, Lt. L. G. Sewell, Lt. F. T. Sinclair, Lt. A. C. Tinkler, Oct. 31st; Sec. Lt. H. L. Bown, Sec. Lt. G. M. C. Cherry, Lt. H. H. Chivers, Capt. A. W. Sarsons, Nov. 1st; Sec. Lt. W. H Bull, Maj. P. Garton, Nov. 2nd.

The initials of Pilot Officer (Hon. Flying Officer) J. G. Dyson are as now described, and not J. C. as stated in "Gazette" of Oct. 21st.

The notification in "Gazette" of Aug. 27th, 1918, concerning Lt. R. H. Whittingham is cancelled

Medical Branch.—Transferred to unempld. list:—Capt. L. B. Stringer, Sept. 24th; Sec. Lt. L W. Jones, Oct. 11th; Capt. R. J. Hearn, Oct. 30th; Capt. J. I. Russell, Oct. 31st; Capt. C. Peacock, Nov. 1st.

Chaplain's Branch.—The Rev. J. R. Towers is transferred to the unempld. list, Oct. 28th.

Memoranda.—Sec. Lt. R. F. B. Campbell (late Gen. List, R.F.C., on prob.) is granted the hon. rank of Lt., April 1st, 1918.

The following Cadets are granted hon. commns. as Sec. Lts.:—180398 O. G. Williams, Jan. 7th; H.71746 A. J. Smith, Feb. 7th; 137769 L. Mawer, March 15th; 35646 J. A Crawford, March 26th; 15587 H. Cheesman, July 31st.

The following probationary Flt. Officers are granted hon. commns. as Sec. Lts.:—F. L. S. Allen, Nov. 19th, 1918; E. W. Bettany, Jan. 25th; W. Anelay, Jan. 31st; B. D. Bowyer, Feb. 13th; C. F. Byrd, Feb. 19th; C. P. Abbott, March 31st; F. J C. Bush, April 15th; A. Barron, May 8th; R. G. Agnew, June 5th.

The following relinquish their commns. on ceasing to be empld.:—Temp. Hon. Lt. J. Hay, March 16th; Maj. H. F. Towler (Sub.-Lt. (actg. Lt.), R.N.R.), Oct. 25th.

Transferred to unempld. list:—Lt. R. V. Tivy, from (S.O.), March 1st; Lt. R. B. Fricker, Oct. 9th; Capt. G. A. Scott, from (S.O.), Oct. 27th; Sec. Lt. A. B. Turner, from (S.O.), Oct. 28th; Lt. W. S. H. Reid, from (S.O.), Nov. 2nd.

The notification in the "Gazette" of May 6th concerning Cdt. 178765 G. Adams is cancelled.

The notification in the "Gazette" of Oct. 7th concerning 29380 Cdt. E. I. Treasure is cancelled.

The notification in the "Gazette" of Aug. 5th concerning 102854 Cdt. T. A. Bailey is cancelled.

Air Ministry, Nov. 14th.

R.A.F.—The notification in "Gazette" of Aug. 1st appointing Capt. W. R. Read, M.C., A.F.C., to a permanent commn. is cancelled.

The following temp. appointments are made at the Air Ministry:—Dep. Dir., 2nd Class.—Group Capt. I. M. Bonham-Carter, O.B.E., from Dep. Dir., 1st Class, Nov. 1st.

Staff Officer, 3rd Cl.—(Air.) Flying Officer H. C. Pyper, Oct 29th.

The following temp. appointment is made:—Staff Officer, 1st Class.—(Air.) Wing Comdr. F. W. Bowhill, D.S.O., Oct. 30th.

Flying Branch.—Wing Comdr. R. P Ross, D.S.O., A.F.C., to be Wing Comdr. (A. and S.), from (S.O.), Oct. 22nd.

Wing Comdr. R. C. M'. Pink to be Wing Comdr. (A.), from (S.O.), Nov. 1st.

Sqdn. Leaders to be actg. Wing Comdrs. (without pay and allowances of that rank) whilst empld. as Wing Comdrs (A. and S.).—R. J. Bone, D.S.O., to Oct. 17th; L Tomkinson, to Oct. 2nd, Aug. 1st.

Capt. M. R. Buckland is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., (S.), May 1st.

Lt. H. J. Gibson is graded for purposes of pay and allowances as Capt. whilst empld. as Capt. (A.), from May 1st to Aug. 2nd.

Flying Officer (actg. Flt. Lt.) G. N. Trace relinquishes the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lt. (A. and S.), Oct. 3rd.

Lt. F. E. E. Villiers to be Lt., from unempld. list, May 16th, prec. next below Lt. F. S. Reed.

Sec. Lts. to be Lts.:—T. F. Harvey (deceased), April 10th, 1918; R. H. Owens, Oct. 13th, 1918; W. E. J. Bloodworth, Dec. 27th, 1918 (substituted for notification in "Gazette" of Oct. 21st); W. A. Manson, Feb. 1st; A. H. Ashtch, July 15th.

Sec. Lts. to be actg. Lts. whilst empld. as Lts. (O.):—A. F. Adams, to Oct. 2nd; J. F. Mehigan, to Oct. 3rd, May 1st.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. E. Brittain, April 20th, 1918; Sec. Lt. (Hon. Lt.) J. S. Batty (Lt., R.F.A.), March 21st; Sec. Lt. W J. McDonough, May 3rd; Lt. E. L. Brown (Lt., Warwick R.), Aug. 20th; Maj. A. V. Squire (Paymaster Lt.-Comdr., R.N.), Oct. 10th; Lt. G. W. Panter, M.B.E. (Lt., R.I. Rif.), Oct. 15th; Lt. G. Malone (Lt., R.I. Regt.), Oct 16th; Lt. (Hon. Capt.) M. M. Parkenham (R.A.S.C.), Oct. 17th; Maj. C. A. A. Hiatt, M.C. (Lt., Norf. R.), Oct. 20th; Lt. F O. Cave, M.C. (Lt., Rif. Brig.), Oct. 22nd; Lt.-Col. A. Ross-Hume, O.B.E. (Maj., Camer. Scot. Rif.), Oct. 24th; Capt. G. B. McClure, O.B.E. (Capt., Black Watch), Oct. 25th; Maj. R. Grey (Capt., Gren. Gds.), Nov. 8th.

Transferred to unempld. list:—Lt. F E. E. Villiers, Dec. 30th, 1918; Lt. N. H. Hamley, March 10th; Sec. Lt. C. R. Moore, April 2nd; Sec. Lt. W. De W. Atkinson, April 15th; Lt. A. L Clark, May 5th; Sec. Lt. R. Turner, May 24th; Lt. H. V. Dorey, May 30th; Sec. Lt. S. J. Chiddenton, June 5th; Lt A. S. Selby, June 6th; Lt. O. C. Dawson, June 26th (substituted for notification in "Gazette" of June 17th; Lt. L. Nevile-Smith, July 6th; Sec. Lt. W. Anderson, July 12th; Sec. Lt. D. V. Clawson, July 15th; Lt. A. Leggatt, July 23rd; Lt. J. B. Edginton, Lt. W. G. Pudney, Aug. 22nd; Lt. P. G. Lewis, Lt. L. G. Robinson, M.C., Aug. 29th; Lt. B. Roxburgh-Smith, D.F.C., Sept. 2nd; Lt. S. A. Robinson, Lt. A. E. Rowell, Capt. R. H. Rusby, D.F.C., Sept. 5th; Lt. R. L. McK. Ross, Sept. 10th; Sec. Lt. A. E. J. Pratt, Sept 12th; Sec. Lt. E. A. Roberts, Sept 13th; Lt. A. C. Kermode, Lt. G. R. Poole, Sept. 17th; Sec. Lt. P. Porteous, Lt. W. A. Roberts, Sept. 18th; Sec. Lt. A Rogerson, D.F.C., Sept. 20th; Maj. F. J. Roberts, Sept. 22nd; Sec. Lt. P. Evans, Sec. Lt. C. A. Thornton, Sept. 26th; Lt. A. C. F. Luke, Sec. Lt. H. F. Rouse, Sept. 27th; Sec. Lt. B. S. Ashley, Lt. R. S. V. Elliott, Sec. Lt. S. C. Elliot, Lt. H. C. Little, Lt. F. S. McClurg, D.F.C., Sept. 28th; Lt. J. C. M. Enslen, Sec. Lt. R. F. Lynch, Sept 29th; Sec. Lt. R. F. Caspareuthus, Oct. 9th; Lt. H. N. O'Donnell, Lt. W. Pope, Lt. C G. Pugsley, Oct. 10th; Capt. the Hon. N. G H. Sturt, Oct. 11th; Lt. A. T. Lotz, Maj. G. V. Rice, Lt. A. P. Squire, Oct. 12th; Sec. Lt. (Hon. Capt.) D. R. Macdonald, Sec Lt. G. H. Mitchell, Lt. G. E. B. Pottinger, Sec. Lt. D. C. Prodge, Oct. 14th; Lt. C. A. Posey, Oct. 15th; Lt. A. H. Padley, Oct. 17th; Lt. S. T. Proctor, Oct. 18th; Sec. Lt. A. J. Price, Oct. 19th; Lt. P. Hardy, M.C., Lt. T. L. Lovell, Sec. Lt. (Hon. Lt.) G. G. Ross-Smith, Sec. Lt. D. Thomson, Oct. 21st; Lt. P. T. Bowers, Sec. Lt. F. G. Gage, Lt. S Gillatt, Sec. Lt. E. V. Parrish, Lt. J. O. Priestly, Capt. E. R Pritchard, Lt J. E. Ruthven, Oct. 22nd; Sec. Lt. J. L. Airey, Lt. E. F. Briggs, Oct. 25th; Lt. W. I. L. Legg, Lt. C. Lobley, Sec. Lt. R C. Morrison, Oct. 26th; Capt. W. P. D. C. Scott, Oct. 27th; Sec. Lt. A. H. Bosher, Sec. Lt. E. S. Coombes, Lt. S. L. H. Potter, Oct. 28th; Sec. Lt. R. H. Barker, Lt. P. R. Bowen, M.C., D.F.C., Lt. L. W. E. Leage, Oct. 29th; Sec. Lt. (Hon. Lt.) J. P. Jones, Sec. Lt. A. A McHardy, Oct. 30th; Capt. R. S. P. Boby, Sec. Lt. J. Garrety, Lt. R. Longman, Capt. T. J. C. Martyn, M.C., A.F.C., Oct. 31st; Lt. W. B. Cass, Nov. 1st; Lt. C. B. Bird, M.C., Nov. 2nd; Sec. Lt. T. W. Ashton, Lt. E. Edgar, Nov. 4th; Sec. Lt. M. Graham, Nov. 6th; Sec. Lt. C. N. Drew, Nov. 11th; Sec. Lt. K. Stuart-Smith, Nov. 14th.

Lt.-Col. Hon. C. M. P. Brabazon, O.B.E. (Maj., Irish Gds.), relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain rank of Lt.-Col., Oct. 22nd (substituted for notification in "Gazette" of Oct. 24th).

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—E. E. C. Pickwood, Nov. 6th; J. A. F. Sinclair (contracted on active service), Nov. 7th.

Sec. Lt. A. T. Rose relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 7th.

The notification in "Gazette" of June 27th concerning Capt. G. A. Revington is cancelled.

Administrative Branch.—Flt. Lt. L. M. Boddam-Whetham to be Flt. Lt., from (S.O.), Aug. 12th (substituted for notification in the "Gazette" of Aug. 29th).

Flying Officer (actg. Flt. Lt.) H. B. Dakin relinquishes the actg rank of Flt. Lt. on ceasing to be empld. as Flt. Lt., Oct. 4th.

Capt. Lt. M. Boddam-Whetham relinquishes his commn. on ceasing to be empld., from (S.O.), Aug. 28th (substituted for notification in the "Gazette" of Oct. 21st, wherein this officer was shown under Flying Branch).

Transferred to the unempld. list:—Sec. Lt. W. K. Jenne, March 13th; Sec. Lt. H. S. Harris, Aug. 31st; Lt. A. Rowbottom, Sept. 4th; Lt. E. W. Pringle, Lt. J. M. Russell, Sept. 6th; Lt. J. Edwards, Sec. Lt. R. C. Ryan, Sept. 6th; Sec. Lt. J. Ross, Sept. 11th; Sec. Lt. C. G. B. Edwards, Sept. 12th; Lt. H. V. Hall, Sept. 27th (substituted for notification in the "Gazette" of Oct. 21st); Lt. J. E. Morgan, Oct. 11th; Sec. Lt. L. A. T. Power, Lt J. G. C. Williams, Oct. 12th; Maj. A. C. E. S. Bowlby, Oct. 14th; Sec. Lt. W. F. M. Hopkins, Capt. A. S. Weeding, Oct. 15th; Sec. Lt. W. J. Wreford, Oct. 21st; Sec. Lt. F. G. Clarkson, Oct. 25th; Sec. Lt. P. Coogan, Oct. 26th; Sec. Lt. P. T. Rule. Lt. A. C. W. Williams, Oct. 27th; Lt. R. B. Collins, Lt. W. H. Crotty, Oct. 29th; Capt. (Hon. Maj.) A. F. Morris, Oct. 30th; Maj. T. G. Leith, C.B.E., Nov. 1st; Sec. Lt. E. J. Gordon, Nov. 2nd; Lt. H. C. E. C. P. Dalrymple, Nov. 4th.

Maj. A. Brind relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 6th.

Lt. A. L. Hitt (Lt., D. of Cornwall's Lt. Infy.) resigns his commn., Nov. 15th.

The notification in the "Gazette" of Aug 22nd concerning Lt. J. Edwards is cancelled.

Technical Branch.—Sec. Lts. to be Lts.:—W C. Francis, May 30th; C. S. Goode, July 7th (substituted for notification in "Gazette" of Oct. 14th); G. C. Walsh, July 14th.

Sec. Lt. (Hon. Capt.) W. E. Humphreys to be Lt., April 2nd, 1918, without pay and allowances of that rank prior to Sept. 17th, 1918.

Sec. Lt. A. N. Goodwin to be Lt., without the pay and allowances of that rank, Jan. 19th.

Pilot Officer T. G. Brice to be Flying Officer without the pay and allowances of that rank, Oct. 1st.

W. J. Collins (late Deputy Commissary and Hon. Capt., Indian Army) is granted a temp. commn. as Sec. Lt. (Grade A.), without pay and allowances, April 1st, 1918, and to be Hon. Capt.

Pilot Officer E. C. Farma to be Pilot Officer (Grade B) from (Ad.), Oct. 18th.

Transferred to the unempld. list:—Lt. H. B. Richards, March 6th; Capt. A. M. Lester, April 15th; Lt. F. S. Barton, May 5th; Lt. C. C. Hicks, June 30th; Sec. Lt H. G. Dixon, July 26th (substituted for notification in "Gazette" of Aug. 19th); Sec. Lt. S. Pollard, Sec. Lt. F. W. Fridham, Sept. 2nd; Sec Lt. R. S. Porter, Sept. 8th; Sec. Lt. (Hon. Lt.) W. H. Pullen, Sept. 9th; Lt R. Roots, Lt. S. M. Rowlands, Sept. 11th; Lt. W. H. Rose, Sept. 13th; Lt. H. E. Randall, Sept. 18th; Capt. F. B. Pulham, O.B.E., Sept. 19th; Maj. A. Robertson, Sept. 21st; Capt. O. I. Preston, M.C., Sec. Lt. J. C. E. Price, Sept. 23rd; Maj. J. S. Nicholson, M.B.E., Oct. 9th; Lt. J. McKeown, Oct. 10th; Lt. H. G. Bell, Oct. 13th; Sec. Lt. T. F. Emms, Oct. 17th; Sec. Lt. (Hon. Lt.) J. G. Dyson, Oct. 18th; Lt (Hon. Capt.) J. F. Bargman, Lt. D. R. Morford, Lt. M. V. Morgan, Oct. 28th; Capt. R. F. Bellamy, Oct. 29th; Sec. Lt. R. Locke, Oct. 30th; Lt. R. J. Costigan, Oct. 31st; Maj. H. G. Atkinson, O.B.E., Nov. 1st; Lt. W. J. Aubert, Nov. 3rd; Sec. Lt. (Hon. Lt.) N. Whitley, Nov. 5th; Sec. Lt. E. W. Reynolds, Nov. 6th.

Capt. A. Belton, O.B.E. (R. Fus.), relinquishes his commn. on account of ill-health contracted on active service, and is granted rank of Maj., Nov. 4th.

Capt. C. Gordon Riley relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Nov. 7th.

Lt. S. C. Tucker relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 18th.

The rank of Lt. H. A. Chapman is as now described, and not Sec. Lt. as stated in "Gazette" of March 28th.

The notification in "Gazette" of Sept. 5th concerning Lt. E. A. Baker, M'.C., is cancelled.

Medical Branch.—Flt. Lt. G. Cranstoun to be actg. Sqdn. Ldr. whilst empld. as Sqdn. Ldr., Sept. 4th

Flying Officers to be Flight Lts.:—S. A. Clark, Sept. 25th; S. R. E. Davies, J. Gorsky, V. I. Levy, K. F. D. Waters, Nov. 1st.

Transferred to empld. list:—Capt. N. Rumboll, Oct. 23rd; Capt. H. C. Cox, Nov. 1st

Capt. O. Moir Gray relinquishes his commn on account of ill-health, and is permitted to retain his rank, Aug. 26th.

Dental Branch.—Flying Officer F. B. Stradling to be Flt. Lt., Oct. 30th.

Chaplains Branch.—The Rev. G. D. Jones, B.A., is transferred to unempld. list, Oct. 21st.

Memoranda.—The following Probationary Flight Officers are granted hon. commns. as Sec. Lts.:—F. H. Dawson, L. J. Empson, Nov. 22nd, 1918; R. P. France, Dec. 1918; F. W. Ings, Jan. 16th; D. E. Huck, Feb. 21st; J. S. Mackinnon, March 9th; A E. Blaxill, W. N. Errington, April 15th; O. Drew, April 30th; J. W. Maidment, June 26th

Lt. B. D. Bellamy (Essex R.) relinquishes his commn. on ceasing to be empld., Oct. 31st.

Transferred to unempld. list:—Capt. G. W. Robarts, M.C., from (S.O.),

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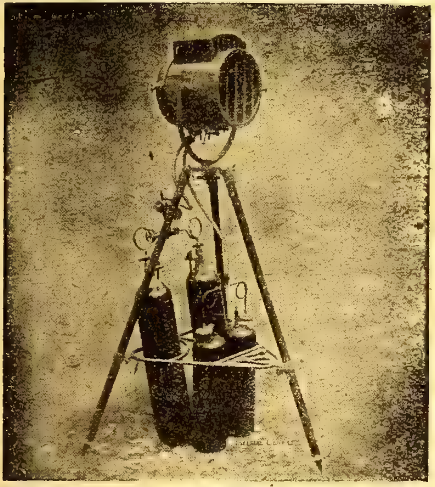

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Sept. 18th; Capt. R. F. Maitland, O.B.E., from (S.O.), Oct. 6th; Lt. (Hon. Capt.) F. C. Clements, from (S.O.); Maj. O. H. Powell, from (S.O.), Oct. 31st; Lt. C. S. Fulton, from (S.O.), Nov. 1st.

The notifications appearing in "Gazettes" of dates indicated below appointing the following Officers to short service commns. are cancelled:—Flt. Lt. L. P. Ferris-Scott (Ad.); Flt. Lt. N. Keeble, D.S.C. (A.); Flying Officer F. G. Brookman (T.); Flying Officer H. H. Sharp (T.), Sept. 12th; Flt. Lt. L. O. Brown, D.S.C., A.F.C. (A. and S.); Flt. Lt. D. O. Mulholland, A.F.C. (A.); Flt. Lt. P. D. Robertson, A.M. (T.); Flying Officer C. Rapley (T.), Sept. 16th; Flt. Lt. P. E. L. Gethin, A.F.C. (A.); Flying Officer H. L. Rough, D.F.C. (A.), Oct. 10th; Flying Officer S. Dawson, D.F.C. (A.); Flying Officer L. G. Morris (T.), Oct. 24th.

The Christian names of Sqdn. Ldr. John Claude Malcome Lowe (A.P. (T.)) are as now described, and not "John Cecil Mansfield," as stated in "Gazette" of Nov. 11th, appointing this officer to a short service commission

PERSONAL NOTICES.

MILITARY.

ENGAGEMENTS.

BECK—DUGDALE.—The marriage arranged between Capt. Edwyn Tyrrell Beck, D.S.O., M.C., Royal Fusiliers, attd. R.A.F., and Miss Mollie Dugdale, will take place on Wednesday, Dec. 17th, at St. Mark's, North Audley Street.

CREWDSON—FYERS.—A marriage has been arranged between Major Eric Crewdson, M.C. (late R.E. and R.A.F.), younger son of Mr. and Mrs. Francis William Crewdson, of Gilling Grove, Kendal, Westmorland, and Mary Stuart, only child of Major Evan W. H. Fyers (Reserve of Officers), Wellington Club, S.W., and granddaughter of the late Lieut.-General Sir William Augustus Fyers, K.C.B.

RAVENSCROFT—JENKS.—The engagement is announced between Capt. S. Trevor Ravenscroft (late Lancashire Hussars and R.A.F.), third son of Mr. and Mrs. S. Ravenscroft, of Broughton Grange, Cartmel, Lancashire, and Brathay, Oxton, Cheshire, and Marjorie, youngest daughter of the late Mr. Henry Jenks, of Barrow Hedges, Carshalton, Surrey, and Mrs. Jenks, Dunairds, Birnam, Perthshire.

AIR FORCE.

ENGAGEMENTS.

FIELD—ELLIOTT.—The engagement is announced between James Roy Field, late R.A.F., younger son of Mr. W. F. and Mrs. Field, of The Highlands, Enfield, and Joyce Clèlie, only daughter of Dr. and Mrs. A. Campbell Elliott, of Cranford, St. Annes-on-Sea.

HAMILTON—MITCHELL.—The marriage of Lieut. Wallace Ferrier Hamilton, R.A.F., youngest son of Mr. and Mrs. Claude Hamilton, of Macedon, Victoria, Australia, and Elsie, daughter of Mr. and Mrs. Ernest Mitchell, of 5, Park Street, Bath (formerly of Folkestone), will take place at St. Andrew's Church, Bath, on Dec. 2nd, at 2.30. No reception. Friends will be welcome at the Church.

SOUTHALL—CAMPIN-TOMPKINS.—The engagement is announced between Mr. A. W. Southall, R.A.F., son of Mr. W. Southall and Mrs. Southall, of Retford, and Marjorie Mary, daughter of the late Mr. W. Tompkins and Mrs. Tompkins, of Bicester.

SYMONS—LE BRASSEUR.—A marriage has been arranged, and will take place early in December, between Stephen White Symons, late R.A.F., son of the late William Christian Symons and Mrs. Symons, of 129, Beaufort Street, Chelsea, and Margaret Le Brasseur, eldest daughter of Mr. and Mrs. Robert Le Brasseur, of Sunnycote, Rosslyn Hill, Hampstead.

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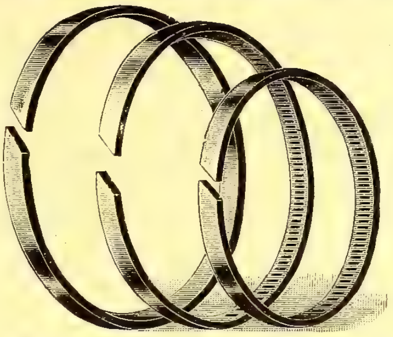

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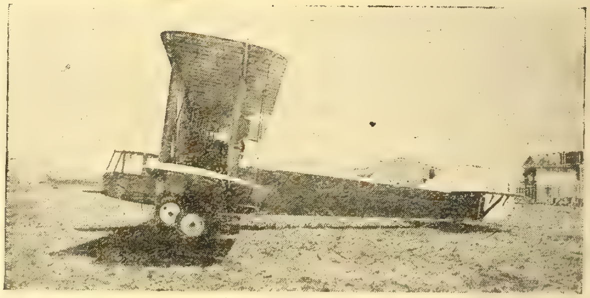

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Edited by C. G. Grey

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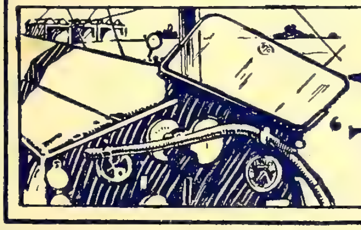

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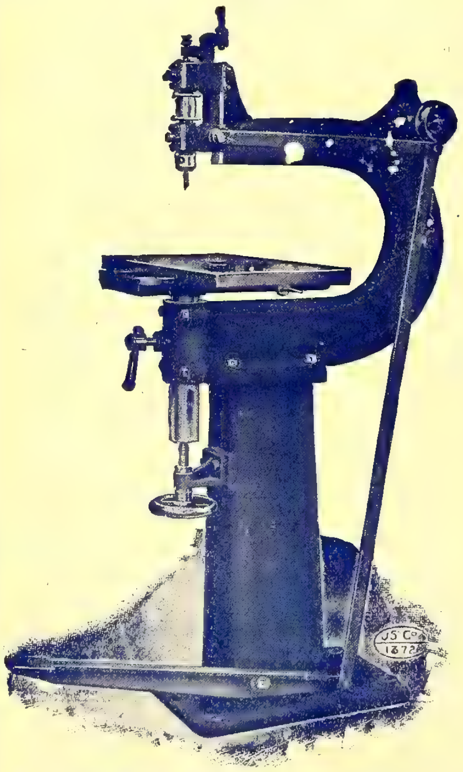

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ON SIX MONTHS OF CIVIL AVIATION—I.

One day last week His Majesty's Stationery Office issued a White Paper entitled "Synopsis of Progress of Work in the Department of Civil Aviation, May 1st, 1919, to October 31st, 1919." As the first document of its kind dealing with Civil Aerial Transport it deserves to be considered in detail by all concerned with aeronautics, therefore it is reproduced hereafter, and such comments as seem necessary are appended to each section.

The impression left on one's mind after reading it is that Commercial Aeronautics have a far greater future than most people believe to-day, for if such progress is possible in so short a time despite the hindrances of Government control it is evident that as commercial flying expands and shakes itself free from the leading strings of the Air Ministry it will develop more and more rapidly and will become established on a firmer basis.

Except in the sphere of International Politics it is impossible to see how the Department of Civil Aviation has helped civil aviation. On the other hand there are many ways in which the Department has been a hindrance. But there are times in the youth of all growing things when a certain amount of suppression is advisable and makes for the better development of the adult. For example young plants have to be thinned and pruned, small boys are the better for the discipline of even the stupidest of schoolmasters, and the female figure is improved by the apparent restriction of a corset in its youthful stages.

The Department of Civil Aviation must be regarded somewhat in such a light. Though it is no help to the Aircraft Industry, the mere fact of its existence irritates the Industry into some activity. But, so far as this "Synopsis" is concerned, one is certainly inclined to jib a bit when the Department takes credit for progress which has been made in spite of its operations and not because of them.

However, let us to the Synopsis. Here followeth the first section:—

I.—INTRODUCTION.

Except for a brief period during Easter week this year, civil flying did not open officially until May 1st, 1919, and the six months which have since elapsed forms perhaps a convenient period on which to make a preliminary review of the work done by, and to estimate the future of, the Department of Civil Aviation.

Between February 12th—on which date it was announced in the House of Commons that the Government had decided to set up a Department of Civil Aviation—and May 1st, the official date of the opening of civil flying, a small staff began to attack the multiplicity of problems and difficulties attending the transition period from war to peace, which had to be met in the commencement of civil aviation. There were the adjustment and redistribution of activities between the Service and civil sides; the framing, with the assistance of representatives from the industry and other experts, of the Air Navigation Regulations for the control of civil flying at home, as distinct from the International Air Convention, governing the regulations for international flying; the necessity for deciding upon which routes traffic was most likely to follow and develop, and the aerodromes which should therefore be retained in the general after-war liquidation.

There were also a number of other problems of a kindred nature to assist in the solution of which there were no landmarks, no established precedents and no accumulated experience.

II.—PROGRESS.

(*a*) Relations with Foreign Countries.—The International Air Convention, which was in the main based on the Air Navigation Regulations drawn up for the control of civil flying at home, was signed on October 14th by 11 out of the 13 nations which were parties to it, the United States and Japan not yet being in a position to sign.

The terms of this Convention were made public some months ago, but it was considered desirable to anticipate its becoming operative by provisionally opening traffic by air with certain foreign countries, as it was thought that aerial transport firms could not too soon gain experience of running regular international services, both for the benefit of the industry, and the early development of the air routes of the Empire on a commercial scale.

Great pains were therefore taken to make temporary agreements with other countries, and such were concluded with Belgium, France, Holland, Italy, and Portugal, while permission for individual flights was obtained from Denmark, Norway, Spain, and Switzerland; and steps have since been taken which it is hoped will ensure the subscription of Holland, Spain, and Switzerland to the International Convention at no distant date, and later of the Scandinavian countries, so that one code of rules for the air will obtain throughout the whole of Europe.

The conclusion of these provisional agreements has enabled British aircraft belonging to commercial firms to visit Amsterdam, Brussels, Christiania, Copenhagen, Lausanne, Madrid, Paris, and Stockholm, whilst a demonstration flight for civil purposes carried out by R.A.F. aircraft was made as far as Helsingfors.

Every effort has been made to assist British firms to establish regular services between London and Paris, London and Brussels, and London and Amsterdam.

So far there is little call for comment. One would only remark that Switzerland seems little inclined to listen to the voice of the charmer from the Civil Aviation Department. Apparently Switzerland regards joyriding as a branch of hotel-keeping and therefore a national prerogative, judging by the obstacles put in the way of British and other foreign aviators who have desired to show the Swiss how it ought to be done.

Of the "demonstration flight for civil purposes carried out by R.A.F. aircraft . . . as far as Helsingfors" perhaps the less said by the Department the better. One has already shown that there was no "demonstration" at Stockholm, and nothing has been heard of any at Helsingfors. Copenhagen and Christiania, which are not good markets, seem to have had all the fun to themselves.

Very wisely the compilers of the synopsis refrain from mentioning the fact that a Gosport flying-boat which was permitted to fly to Amsterdam was expressly prohibited from flying after it got there. So it seems that the "Progress of Work" rather cancels itself out when one considers the plus and minus sides of it.

Concerning Air Routes.

The Synopsis continues:—

(*b*) Reconnaissance.—Considerable progress has been made

> with the reconnaissance and development of Imperial air routes.
>
> The Cairo-Karachi route has been opened for military purposes, and will be available for civil traffic at an early date. That from Cairo to the Cape has been surveyed, and a chain of landing places established. Of the latter the section lying in the Union of South Africa should shortly be available for the use of civil enterprise, and the whole route should be capable of being flown on an experimental basis before the end of the year. A full reconnaissance of the route from India to Australia has also been completed.

It will be noticed that the compilers of the Synopsis have wisely omitted any reference to "blazing the trail," a phrase which was until recently popular among speechmakers from the Department of Civil Aviation.

It is rather a pity that more has not been said about the Cairo-Karachi route and that from India to Australia. Perhaps General Swinton's excellent department will shortly issue a contour map of the line, showing and describing the landing places. It is, however, of interest to note that the first civilian flight over part of the route is that of the amazing Monsieur Poulet, who, with his ancient tail-boom Caudron and his two old 80 h.p. Le Rhône engines, has successfully taken the shine off all our Australian competitors for the £10,000 prize, thanks to the combined efforts of the Department of Civil Aviation and the Committee of the Royal Aero Club, which prevented anybody from starting while the weather was good and the days were long.

The Cape to Cairo route is also of interest, and more information as to landing places would be gratefully received. But it seems quite likely that for some years to come the best way to getting to the Cape by air will be by seaplane down the Red Sea, or even down the West Coast. There is an opportunity here for an adventurous seaplane pilot to be the first to reach the Cape by air.

FRAGILE REGULATIONS.

We now come to a far more immediately interesting section of the Synopsis :—

> (c) AIR NAVIGATION REGULATIONS.—The Air Navigation Regulations which came into force on May 1st, 1919, were based on war experience and on an estimate of the requirements of civil aviation. In a few directions experience has shown that there are omissions, while in others the Regulations have been found to be somewhat in advance of requirements and their strict enforcement up to the present has proved undesirable. It has not always been easy to administer the Regulations so as to secure the safety of the public without handicapping the expansion of air work, but frequent consultations between the department and representatives of the industry and the goodwill of all concerned have enabled a very fair measure of success to be obtained in this respect. Any defects in the Regulations or in the method of administering them brought to light by experience are corrected as rapidly as possible

One is glad to notice that in some respects "the Regulations have been found to be somewhat in advance of requirements, and their strict enforcement up to the present has proved undesirable." This disposes of a prevalent idea that some of the Regulations are so silly that if the Department enforced them it would merely make itself look more ridiculous than it is in reality. It also accounts for the fact that unregistered pilots fly machines without airworthiness certificates over prohibited areas with absolute impunity. It also accounts for the casual way in which people wander into and out of the country by air without troubling official people about their doings.

But it does not account for airworthiness certificates being given to machines which are not airworthy, nor for the refusal of airworthiness certificates to machines which are airworthy. Nor does it account for the refusal of permits for the carrying of passengers to pilots of unblemished record and long experience and the granting of permits to notoriously incompetent or reckless pilots.

A BAD CASE OF OFFICIALISM.

One has in mind the case of a pilot who owned a machine before the war and carried passengers without let or hindrance. During the war he was a test pilot and put many dozens of machines of all types through their tests for private firms and for the Air Council. He also carried a great number of passengers during these tests. In five years' flying he never had an accident owing to any fault of his own, and his only crashes have been two or three quite trivial affairs caused by defective machines.

Yet when he applied for a licence to carry passengers "for fee or reward" he was refused because of defective eyesight. It is true that he wears glasses, but such is his carefulness that he always carries a spare pair of glasses in his pocket when flying in case the pair he is wearing are damaged or knocked off, the said glasses being built into proper flying-goggles.

There is a clause in the Regulations which says that physical disabilities such as will disqualify a new pilot are not to apply to pilots who have flown before a certain date. This clause and his splendid record as a pilot should be enough to qualify the pilot in question for his passenger-carrying certificate, and yet he has been turned down by the doctors because *they*, forsooth, are not satisfied with him.

Thus he is prevented from earning his living at a profession in which he is a past master, and the progress of civil aviation is deprived of the help of a very valuable man. It would be of great interest to know what the doctors who turned him down know about practical flying and how much of it they have done themselves.

It would appear from this case that not only may it be "undesirable" to enforce the Regulations against people who choose to ignore them, but that the officials of the Air Ministry may themselves ignore with impunity such few Regulations as exist for the benefit of aviators instead of for their suppression.

(To be continued.)

THE DEATH OF M. DEUTSCH DE LA MEURTHE.

One regrets to announce the death in Paris, on Nov. 24th, of M. Deutsch de la Meurthe, President of the Aero Club de France. He revived by his actions memories of the splendid days of the Medicis, when a discriminating patronage developed the arts and the sciences to a degree such as was not possible in many decades of normal progress. The science of aeronautics and the art of music owe his memory a heavy debt of gratitude for the generous benefactions by which he materially assisted in their development.

Time is lacking in which adequately to deal with his career in this issue of THE AEROPLANE. His biography therefore appear in this paper next week.

THE PARLIAMENTARY AIR COMMITTEE.

On Nov. 18th Major-Gen. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., attended a meeting of the Parliamentary Air Committee. Sir William Joynson-Hicks was in the chair. General Seely made a further statement regarding his resignation, in the course of which he is said to have laid great stress on Mr. Churchill's determination to keep the Royal Air Force under the control of the Secretary of State for War. The following motion was unanimously passed :—

"That this Committee expresses its deep anxiety in regard to the present union of the Air Ministry and the War Office, and the consequent position of the Royal Air Force, and requests the Government to announce its air policy at the earliest possible moment, and to provide a day for a full discussion."

It will be interesting to await future events. Perhaps the "anxiety" of the Parliamentary Air Committee will serve to defeat its own ends and bring about the abolition of the Royal Air Force, which is not the least of the evils brought about by the aid of the said Committee.

AIR POWER AND SEA POWER.

By "Auditor Tantum."

Said the great Francis Bacon, Lord Verulam, "To be master of the sea is an abridgement of a monarchy," or, in other words, an epitome of sovereignty. This is so obvious and trite, and has been repeated in different ways with such "damnable iteration," that the Briton has at length got it into his noddle. Tell him every day in the largest writing that Somebody's Pills are worth a guinea a box and he will eventually take it as an established fact, and not as an opinion. Which is the secret of advertising and politics.

But "the old order changeth," and the vantage of strength at sea, which, says Bacon, "is one of the principal dowries of this kingdom of Great Britain," is in danger of losing its supremacy, which is passing to the sovereignty of another element. And the voice that proclaims this change with more authority and insistence than any other is, curiously enough, that of a distinguished seaman.

The Sovereignty of the Air.

Lord Fisher, who throughout his long life has always been in the front of progress, and is now more advanced in his ideas than most men of half his age, is quite revolutionary in his opinion of the effect of air-power on land and sea.

This is strange, for the British Navy, the most hide-bound and conservative Service on the face of the earth, was for long the most unbelieving in the possibilities of aircraft. *Malgré lui* the Navy took aircraft unto itself, but there being no faith, there was lack of works also.

"Air fighting dominates future warfare by sea and land." These words, spoken by the creator of the modern Fleet, have more significance than when the same words are shouted (as they have been) from the house-tops of the Aircraft Industry. And, the great sailor adds, the only way for a fleet to escape destruction in future will be for it to get under the water.

In which case, it is obvious, even if a fleet so constructed should be able to maintain the traditions of the Navy under the water as well as it did upon it, that the sovereignty of which Bacon spoke has passed from the sea to the air. For if the British Navy is compelled to submerge itself, with Admiral and Vice-Admiral, and all the Articles of War, it is clear that the compelling factor must be the superior.

"Himmel! Are these so beautiful shots for us meant, Heinrich?"

But what of the land? An army or a nation cannot usefully be employed in the bowels of the earth. The problem of the defence of the people of these islands is to be solved in but one way; by the creation of an overpowering air fleet. And it is at this moment, when the painful truth is being brought home to the intelligent section of the community, that the British Government is relentlessly reducing the already meagre building programme of aeroplanes, and completely cancelling the construction of airships.

Newspaper Agitation.

One of the strangest features of the case is that the group of newspapers which claims to have promoted aviation in this country has outbawled all others in their enthusiasm for economy in this direction. The "Evening News" stated a few days since that the skilled hands discharged from aircraft factories should be absorbed into some *useful trade*. Providing for the future safety of the realm is evidently not a useful trade. The fact is that the B.P. does not yet take aircraft seriously, and seems to think that the Government is similarly afflicted. It has an idea that, the war being over, our rulers have no further use for aircraft. A not altogether unfounded suspicion.

The attitude of the B.P. in general is that of a Felixstowe worthy, who, being interrogated as to the fate of the "Fury," replied: "It's a do, Sir, that's what I call it, nothing more'n a do. A naxident like that when the've got no more use for the thing, sets yer thinkin', don't it?"

The Arguments for the Fleet.

Arguments against Lord Fisher's dicta take three lines. 1. That the war proved that aircraft attacks against warships were largely failures, owing to the great height made necessary by anti-aircraft fire. 2. That submerging is very nearly useless as a protection; witness the efficacy of the depth charge. 3. That wars have ceased, and we shall have the Brotherhood of Man.

To take the last item first, the Brotherhood of Man is a hoary hoax, with "a very ancient and fishlike smell," an odour, in fact, of Red Herring. It is not in any way a discovery of Mr. Lloyd George for the rebuilding of the bad old world. "Mrs. Jellaby held a discussion with Mr. Quale, of which the subject seemed to be the Brotherhood of Humanity, and gave utterance to some beautiful sentiments."

After every great conflict there has arisen this idea of Universal Peace, and the war that was to end war. When Augustus had achieved the Imperial power, and "compassed earth with conquest, Heaven with fame," it was prophesied by Virgil, "Then wars shall cease and savage times grow mild, with iron bolt and chain firm closed the gates of Janus shall remain."

After the war with France in 1815, there occurred the same symptom, in conjunction this time with that passion for economy, the result of which was the inefficiency of the Army at the outbreak of the Crimean War.

The lesson is apposite now. There is imperative need for economy in the Services, but it must be economy applied with progress and reform. "Economy without a policy of reform is the creator of chaos and weakness on land and sea." And, it may be added, in the air.

The Vulnerability of the Ship.

The second argument is feeble, for if a vessel is not safe from aircraft attack when submerged, theoretically it should be at least as vulnerable on the surface. And the first argument relies on a supposition of gunnery efficiency which is rather staggering to those who have seen the Naval anti-aircraft gunner and his gunnery "loot" at work, and have marvelled at the deadly inaccuracy of his shooting.

Tales of this failing have been told in THE AEROPLANE, and there is a tawdry one of a gunner who put a shell through his own Admiral's flag while firing at enemy aircraft. The Admiral, being a disciple of Lord Fisher, is reported to have said—in effect—"You be damned!" And he was so.

It is, of course, a fact that the art of bombing war vessels is capable of considerable improvement. There was the case of the "Goeben," which was for some days heavily bombed as she lay beached in the Straits, some time before the Armistice. The writer saw her some months afterwards, and she appeared to be none the worse, although she was popularly supposed to have been destroyed for the third or fourth time in her career.

But as aircraft and bombing are both in their infancy, it is probable that Lord Fisher is right, and the surface of the sea will be no longer the exclusive theatre of operations of the Fleet, at any rate when the enemy is in the heavens above. A prophet having no honour in his own country, it is improbable that we shall have that submersible Fleet until other Powers have a few years' start of us. As Lord Fisher says, "All the brainy men said that aeroplanes were impossible. Yes! and we still have ancient Admirals who believe in bows and arrows."

The Councils of the British Empire seem to oscillate from panic to somnolence according to the attitude of the Press, and perhaps it would be an improvement to adopt some such system as the Goths employed. The ancient Goths of Germany, as all the world knows, used to have a wise custom of debating everything of importance to the State twice: once drunk, and once sober. Drunk, that their Councils might not want vigour, and sober that they might not want discretion. Between the two a middle course was found which touched the points of wisdom.

A SUBMERSIBLE FLEET.

In itself, the idea of a submersible fleet is distinctly attractive, and a blind squadron manœuvring under water is a situation full of comic possibilities. Most of us still have a weakness for Jules Verne's "Twenty Thousand Leagues under the Sea," and could wish that the modern submarine had the comfort of the "Nautilus." As it is, going on board a submarine is like entering a sewer by the manhole.

It is to the internal combustion engine that Lord Fisher looks for salvation. The rest is easy. There is no impossibility in building a submarine of 20,000 tons, the difficulty is merely one of horse-power, and that will be overcome. But whether we get our submersible warships or not, the *sine qua non* of military power is a strong Air Fleet.

Indeed, it is not difficult to foresee a time when our Armed Forces will consist of the Under Seas Fleet, the Air Fleet, and a certain number of infantry who will be little more than the ground portion of the R.A.F. Cavalry will be useless, and the big gun, as a distinguished artillery officer has said, will be as obsolete as the catapulta and ballista of the Romans, and "the last argument of kings" will be the bomb.

It is cheaper and deadlier to carry your projectile and drop it on the spot, than to propel it with a costly charge with more or less uncertainty. No longer will there be any need for an Uncle Toby to "exasperate his symptoms in pursuit of the phantom Knowledge," endeavouring to discover the road that the cannon-ball did not go.

THE POWER OF AN AERIAL FLEET.

A powerful Air Fleet would be a more potent factor in keeping the peace than even the British Navy has been, for the Fleet being confined to the sea, its effect is not felt in equal degree by all countries, whereas no country would be inaccessible to an Imperial Air Fleet, and the result of such an Armada in being might be such as that of which Cæsar spoke, when after the bloodless victory of Ilerda, he said, "That it was as much a General's duty to conquer by tactics as the sword." The threat of destruction would be sufficient.

Such appear to be some of the lessons of the Great War; but, as is usually the case, they will probably for some time remain unheeded, and the development of the Forces of the Crown on the lines required will be left to the mercy of chance, drift and political opportunity.

It will not be for lack, however, of a plain-speaking prophet, and Admiral of the Fleet Lord Fisher of Kilverstone, whose reorganisation of the world-wide machinery of the British Navy showed him to be a great strategist, and a man of immense foresight and imagination, is not likely to allow the authorities to remain slumbering in a policy of stagnation.

The cause of Air Power desperately requires a Fisher to put its case before the public as vehemently and remorselessly as the great seaman has stated that of the Navy.

THE FLIGHT TO AUSTRALIA COMPETITION.

THE VICKERS "VIMY" MACHINE.

The following letter was received by Vickers, Ltd., from General Sir W. Birdwood, G.C.M.G.:—

"I very heartily and sincerely wish all possible success to Capt. R. M. Smith, M.C., D.F.C., A.F.C., Australian Flying Corps, Lieut. K. M. Smith, R.A.F., and Serjeants J. W. Bennett, A.F.M. and W. H. Shiers, A.F.M., Australian Flying Corps, in their forthcoming attempt to fly to Australia.

"They know well that there is a very arduous task and very many dangers before them—but I know they will face them as fearlessly as they did the difficult and dangerous duties which have been allotted to them during the last five years and in the overcoming of which they helped to the final victory.

"I look forward to congratulating them in Australia.

"(Signed) W. R. Birdwood."

The following letter, written at Pisa by Capt. Ross Smith, pilot of the Vickers "Vimy" machine now on its way to Australia, has been received by Vickers, Ltd.:—

"We landed here just after 3 p.m. yesterday (Nov. 13th) from Lyons and have not been able to get away to-day.

"It took a lot of haggling to get our petrol and hot water for the radiators at Lyons, and we did not leave there until 10 a.m.

"When we got near here yesterday we decided we could not make Rome before dark, and as one manifold was badly gone we landed. Part of the aerodrome was sticky and we had to dig ourselves out of one patch.

"We had patched up the manifold at Lyons but it got worse and we found it had completely gone here and also burnt out part of the aluminium plate above the petrol strainer. The mechanics fitted another manifold and repaired the cowling, etc., but it was 11 a.m. before we were filled up and ready to start this morning (Nov. 14th). It was then raining hard with a strong south wind and low clouds, so we did not start.

"There is an R.A.F. officer and one mechanic here with petrol and oil, and the officer has done all he can for us, and the Italians have been sympathetic also. Capt. Horne (here) (of No. 1 Air Route) has advised us to go to Taranto and thinks Suda Bay, in Crete, is still available, so in view of having landed here we now intend to miss out Rome and go to Taranto from here and find out about the rest of the route to Cairo. Taranto is now H.Q. of No. 1 Air Route.

"It is still raining now (7 p.m.), but we have hopes of getting on again to-morrow if the aerodrome is not too wet.

"It was good flying yesterday from Lyons to here and the Riviera looked very fine and we are very fed up at this rotten turn of the weather, but still more fed up with our manifold.

"We are all very fit and the mechanics have worked like Trojans. So far we have not been able to take any cinema pictures, principally on account of the intense cold when flying, but we hope to start it next time.

"I like the 'Vimy' to fly very much and find she does 75 on the Pitot at 1,650 revs. That is what I am flying her at. The engines are certainly the best two I have ever had.

"(Signed) ROSS SMITH."

The following telegram from Rome, dated Nov. 15th, has been received:—

"Yesterday at Pisa heavy rain—aerodrome under water—attempted start—got bogged—spent day on machine—had engines running eight to-day—bogged badly taxi-ing—used planks—Italian mechanics dug out machine—bogged again—but finally got away—Sensational start—Bennett held tail down until machine moving then made running jump at rear cockpit—hauled aboard by Shiers as machine was leaving ground—aerodrome two inches under water but 'Vimy' rose beautifully—crew very wet but cheerful—encountered strong head wind—ground speed only 50 miles hour—passed through some heavy clouds otherwise hazy bumpy but landed Rome three o'clock.—ROSS SMITH."

The Vickers "Vimy" machine arrived at Suda Bay, Crete, on Nov. 17th and at Cairo on the 18th. It is stated to have left Cairo for Damascus on Nov. 19th.

THE BLACKBURN MACHINE.

The Blackburn "Kangaroo" left Hounslow for Australia at 10.37 a.m. on Nov. 21st, in good weather.

It arrived at Romilly, 60 miles S.E. of Paris, at 3.0 p.m. on the same day, after passing through a heavy snowstorm over Amiens. The commandant of the aerodrome at Romilly received the crew with great courtesy, and has done everything possible for their comfort.

The commanding officer and navigator is Capt. G. H. Wilkins, M.C. The pilots are Lieuts. Val Rendle and D. R. Williams. Lieut. G. H. Potts is the engineer officer.

A note on the aviators and the machine was published in the Nov. 12th issue of THE AEROPLANE.

THE SOPWITH MACHINE.

Nothing has been heard of Capt. Matthews since the Reuter message of the 16th inst., which stated that the machine was detained at Gonsenheim, near Mayence, by bad weather.

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NAVAL & MILITARY AERONAUTICS

[The Official "Gazettes" and Personal Notices will be found on page 1814.]

GREAT BRITAIN

NAVAL

Admiralty Appointments.

The following appointments have been made:—

Nov. 18th.—Lieut.—H. E. M. Watkins (Capt., Temp. Maj., R.A.F.) promoted to Lieut.-Comdr., seny. Oct. 17th.

Nov. 19th.—Comdr.—C. D. Longstaff, to "Furious," in command, Nov. 21st.

Nov. 22nd.—Comdr.—O. M. F. Stokes, D.S.O., to "Pegasus," in command (on recommg.).

* * *

H.M.S. "Pegasus."

H.M Seaplane-carrier "Pegasus" will be recommissioned for service on the Mediterranean station, at Rosyth on Dec. 2nd with a Devonport crew.

MILITARY.

The Afghan War.

On Nov. 13th the aerial operations against the Mahsuds began with an air raid on the villages of Kaniguram, Makin, and Marobi, five tons of explosives were dropped. All the machines returned safely. On Nov. 16th another raid was carried out on Shakai, north of Wana. It is stated that the Mahsuds are not particularly pleased with this method of warfare and are already making tentative approaches for Peace.

The terms presented to the Mahsuds and rejected by them included an undertaking of non-interference with aeroplanes flying East of the Durand line.

On Nov. 18th the villages of Ismailkhan and Zuran Atsar were bombed, and as a result of this the sections of the Wazirs who had absented themselves from the Jirgah at Sakka Khel came in and the whole tribe has now accepted the British terms unreservedly.

The aerial operations against the Mahsuds are continuing.

AIR FORCE.

The Airship Department.

The Air Ministry announces that the Airship Department of the Admiralty has now been transferred to the control of the Air Council. All correspondence therefore should in future be addressed to the Secretary, Air Ministry, Kingsway, W.C.2.

The W.R.A.F. Old Comrades' Association.

The following was issued by the Air Ministry on Nov. 22nd:—

All officers and other ranks of the W.R.A.F. who are serving or have served during the war will be interested to know that it is proposed to form a W.R.A.F. Old Comrades' Association.

It is felt that a great number of friendships were made between women serving in the Corps during the war period and afterwards, and that some opportunity should be afforded for the periodical renewal of these friendships, and it is the object of the Association to do this and to foster, as far as possible, the "esprit de corps" that existed in those days.

It is also hoped to form local branches to arrange reunions and to hold annual meetings of members.

Apart from its social side, the Association proposed to adopt practical means to assist members in obtaining employment, to help those who are in need of assistance, to endeavour to get suitable cases into homes, hospitals, etc., and to make arrangements, during their convalescence, for members who have been ill. Another possible development will be the exchange of hospitality between country members and those living in town.

Such an Association would not only preserve the spirit of comradeship that was one of the most admirable features amongst all ranks of those who served in the W.R.A.F., but should encourage preparedness to help the country in time of need should such occasion arise.

All officers and other ranks are invited to attend the inaugural meeting which will be held on Saturday, Nov. 29th, at 3 p.m., at Birkbeck College, Breams Buildings, Chancery Lane. Those unable to be present should write to the Secretary, W.R.A.F., O.C.A., 5, Red Lion Yard, Waverton Street, W.1, offering to form or to join local branches in the districts where they live.

The proposed rates of subscription are merely nominal.

A Certain Liveliness.

During the morning of Nov. 21st a number of Sinn Fein men, believed to be in quest of arms, attempted to raid the R.A.F. stores distributing park in Marrowbone Lane, Dublin. The raiders were repelled after an exchange of shots. One of the raiders is said to have been injured. The police are investigating the matter.

At Last!

The result of some R.A.F. fencing contests in connection with a fencing match against the Army was reported last week. On November 19th, the Army and Air Force teams met with foil, sabre, epée, and bayonet. This was really the opening of the Services fencing season, and the keenness of the contests and the good attendance of spectators augur well for the success of the sport. Though the same three men represented the R.A.F. in each event they proved equal to the occasion, both in skill and stamina, and eventually won by four events to none, or 22 matches to 14.

The R.A.F. representatives were: Squadron Leader E. G. H. Clarke, Flight Lieut. F. G. Sherriff, and Serjeant-Major Grainger. They won the foils by 5 to 4, the sabres by 5 to 4, the epée by 6 to 3, and the bayonet competition by 6 to 3.

The skill displayed by the winners was of a high order, and was the more noteworthy by reason of the fact that while the R.A.F. relied on only three men (as already stated), the Army drew upon nine to represent them during the afternoon.

The Army teams were:—Foils: Capt. Wand Tetley, Capt. Smith, Serjt.-Major Elliott. Sabres: Col. R. Campbell, Major Huntingdon and Serjt.-Major Elliott. Epée: Col. Campbell, Capt. Wand Tetley, and Serjt.-Major Eggleton. Bayonet: Capt. Barnes, Serjt.-Major Reardon, and Serjt.-Major Reed.

The First Victory.

The R.A.F. XV scored their first victory of the season on Nov. 22nd in a game against the London Welsh at Herne Hill. From the outset it was a good game to watch, both sides playing strenuously. The forwards were fairly evenly matched, although the Welsh got the ball from the scrum more often. Behind the scrum the R.A.F. showed a marked superiority—the two new wings showing a great turn of speed.

In the first half the R.A.F. scored three times through Penny, Maxwell and Wagner, and Munday converted one of these. The Welsh scored one try, which was converted.

Half-time: R.A.F., 11 pts.; L. Welsh, 5 pts.

In the second half the R.A.F. were penalised several times, and from one of these kicks the Welsh scored a penalty goal. Soon afterwards they scored again from a break-away, and, this being converted, they led by two points. From this point the R.A.F. took charge of the game, and after Maxwell had been collared near the line, he gave the ball to Lees, who scored a good try, which was not converted.

Final score:—R.A.F., 14 pts.; L. Welsh, 13 pts.

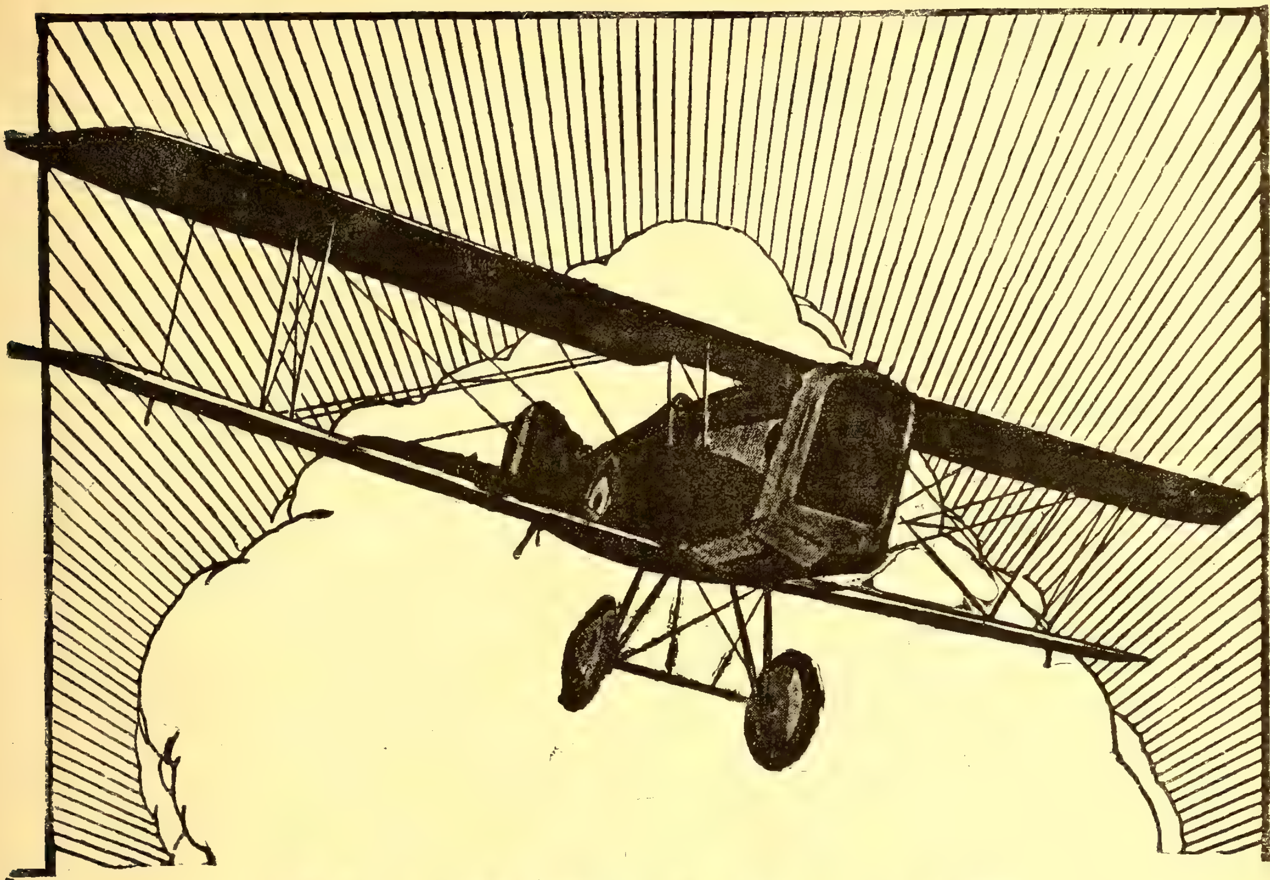
R.A.F. Team: F. O. Damant, S. Ldr. Penny, Flt. Lieut. Thomas, S. Ldr. Neale, F. O. Wagner, S. Ldr. Smart, S. Ldr. Pulford, F. O Maxwell, Flt. Lieuts. Munday, Scroggs, Lees, Abbot, and Simpson, Serjt.-Major Patten and Serjt. Smith.—F. R.

The C.F.S. (1918) Dinner.

A dinner will be held at Claridge's Hotel on Thursday, Dec. 4th, at 8 p.m., for the officers who served at the Central Flying School, Upavon, during the year 1918. The subscription is £3, including wines. Will officers wishing to attend please send their subscriptions and notifications to Major J. C. Slessor at the R.A.F. Club, Bruton Street, W.1., by Dec. 1st at the latest. Wing Commander A. J. L. Scott, C.B., M.C., A.F.C., will preside. Uniform or evening dress.

The Old Comrades' Association, 7th Wing, R.A.F.

The First Annual Dinner of the Old Comrades' Association of 7th Wing Headquarters, R.A.F., was held in the "Flying Horse" Hotel, Nottingham, on Saturday, Nov. 15th, 1919. Col. A. G. Board, C.M.G., D.S.O., presided over a fairly good attendance.



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The 7th Wing O.C.A., which was formed early this year, is believed to be the first association of this nature in the R.A.F.

DENMARK.

The Danish correspondent of THE AEROPLANE writes :—

Two more Naval flying pupils, Lieuts. Andersen and Sorensen, are leaving for England to receive their training there.

FRANCE.

A NEW FRENCH AIRCRAFT-CARRIER.

The new dispatch vessel "Bapaume" is to be completed as an aircraft-carrier, and will be attached to the Fréjus-St. Raphael Naval Air Station. At present the only aircraft-carriers the French have are the old "Foudre" and the converted liner "Campinas."

A FATAL ACCIDENT.

The escadrille under Capt. Metzergues returned to Tunis on Nov. 19th, after a flight to Casablanca. They reported the loss of a machine in the Kroumirie Mountains owing to bad weather. The pilot, Lieut. Thouzellier, and his mechanic were killed.

A SEAPLANE FLIGHT.

According to a Reuter report of Nov. 20th, three seaplanes from St. Raphael have arrived at Rabat (Morocco), having completed the non-stop journey at an average speed of 94 miles per hour.

This apparently refers to the flying-boat escadrille which left St. Raphael for Casablanca on Nov. 1st. But one fails to see why the flight which has taken nearly a month to accomplish should be called a "non-stop journey."

ITALY.

According to recent information, Italian Service aeroplanes still lack magnetos and certain essential controls by reason of the Fiume affair.

JAPAN.

The Japanese Naval Authorities have decided to open a new Naval Air Station near the Kure Naval Base and Dockyard. A site at Himomura, in the Kama Province, is being surveyed now.

POLAND.

According to a report from Major Cedric E. Fauntleroy, the commanding officer of the Kosciuszko squadron, another American air squadron is being formed to serve with the Polish Army. The squadron will be named after Count Casmir Pulaski, the Polish patriot who fought and died for the United States. The two squadrons will be amalgamated in the Polish-American Flying Group.

SWEDEN.

The Danish correspondent of THE AEROPLANE writes :—

THE ITALIAN VISITORS.

Lieut. Madelena, one of the four Italian officer-pilots at present staying in Stockholm, started in the morning of Nov. 11th for Helsingfors in the largest of the Italian aircraft with the Italian Naval Attaché, Count Gravin, and a mechanic as passengers, alighting safe in the harbour of the Finnish capital at 2 o'clock. The flying-boat was later presented to Finland.

Both Lieut. Madelena and the Squadron Commander, Count Robinet, have been decorated by the Swedish King as an acknowledgment of the Italian Naval aircraft gift to Sweden.

PROPAGANDA.

The Swedish Naval Authorities have asked permission to spend a small part of the amount granted for the buying of flying material on the acquirement of an instructive film of 500 metres length, showing the proper way of alightment of seaplanes in high sea.

U.S.A.

GRADES AND BADGES IN THE U.S. SIGNAL CORPS (AIR SERVICE).

The following document has been issued on the authority of the U.S. War Department :—

The Secretary of War directs that Paragraph 1269, Army Regulations, be rescinded and the following substituted therefor : Examinations for ratings of Military Aviator, Junior Military Aviator, Military Aeronaut, and Junior Military Aeronaut will be held at such times as exigencies of the Service require. Such officers as are recommended for these ratings by their commanding officers will be ordered by the Chief of Air Service before an examining board, to be composed of two officers of experience in Air Service and one medical officer, and to be convened from time to time by the Chief of Air Service to conduct such technical and physical examinations as may be prescribed. The medical officer of the board will take part only in the physical examination. The examination will be prescribed by the Chief of Air Service, and will be both theoretical and practical, and will include a demonstration of fitness of the candidate for advanced rank and command if any be involved in the appointment. No officer shall receive the rating of Military Aviator or Military Aeronaut until he shall have served creditably for three years as an aviation officer, with the rating of a Junior Military Aviator or the rating of a Junior Military Aeronaut, except that in time of war any officer or enlisted man who especially distinguishes himself in active service may be rated as a Junior Military Aviator, Military Aviator, Junior Military Aeronaut, or Military Aeronaut, without regard to examination or to length of service.

The Chief of Air Service will from time to time submit names of aviation officers qualified for rating as Military Aviators, Junior Military Aviators, Military Aeronauts, and Junior Military Aeronauts. Such rating to be announced in special orders, which orders shall cite the date of the rating in the case of each officer so rated. Each officer so rated shall receive a certificate to the effect that he is qualified for the rating, and while so rated is entitled to the rank, pay, and allowances authorised by Acts of Congress approved July 18th, 1914, June 3rd, 1916, and July 24th, 1917.

Paragraph 1584-3/4 is amended as follows : An officer of, detailed in or attached to, the Air Service who has demonstrated that he possesses the required qualifications shall, under such regulations as may be prescribed by the Chief of Air Service, be rated as "Airplane Observer," "Balloon Observer," "Aerial Gunner," "Aerial Bomber," "Airplane Pilot," or "Dirigible Pilot," as the case may be. The fact of such rating and date thereof, which is the date of final qualification, will be published in orders by the Chief of Air Service, and a copy of the order will be forwarded to the Adjutant-General.

The Secretary of War directs that no additional badges will be employed. The present authorised badge for military aviator (the double wings and the U.S. shield) will also be used by junior military aviators and airplane pilots. The aeronaut's badge (double wings and a spherical balloon) will be used by junior military aeronauts and dirigible pilots. The observer's badge (the letter "O" and one wing) will be used by airplane observers, balloon observers, aerial bombers and aerial gunners.

AEROPLANES AND ENGINES IN THE U.S. ARMY.

The following tables have been extracted from the official "Air Service News Letter" of the U.S. Military Air Service dated Oct. 31st, 1919 :—

The Air Service reports 9,586 planes and 32,033 engines of all types on hand; 54 per cent. of the planes and 57 per cent. of the engines are of the active class.

Airplanes and engines are classified as "active," "obsolescent," and "obsolete." Obsolescent types will be used until the supply is exhausted, but no extensive repairs are to be made or additional spare parts manufactured. Obsolete types are those no longer used. They will be held until final disposal has been authorised.

PLANES.

Class	In commission	In reserve	Out of com.	Total	Per cent.		
					In com.	In res.	Out com
Active	337	4,091	739	5,167	7	79	14
Obsolescent	177	2,057	266	2,500	7	82	11
Obsolete	3	677	699	1,379	0	49	51
Experimental	15	242	283	540	3	45	52
Total	532	7,067	1,987	9,586	5	74	21

ENGINES.

Class	In commission	In reserve	Out of com.	Total	Per cent.		
					In com.	In res.	Out com
Active	414	15,833	2,100	18,347	2	86	12
Obsolescent	114	6,481	1,244	7,839	2	82	16
Obsolete	1	353	2,400	2,754	0	13	87
Experimental	8	1,562	1,509	3,079	0	51	49
School	0	14	0	14	0	100	0
Total	537	24,243	7,253	32,033	2	75	23

MEDALS AND DECORATIONS.

The following piece has been extracted from the official "Air Service News Letter" of the U. S. Army, dated Nov. 7th, 1919 :—

CONCERNING THE WEARING OF MEDALS AND DECORATIONS.

The War Department authorises publication of the following information from the Office of the Chief of Staff :—

The new Army uniform regulations and specifications are now in course of preparation, but, pending issuance, the following changes in regulations concerning the wearing of medals and decorations is in force.

When dress and blue uniforms of the Army were abolished, it became impossible for any officers or men to wear the medals awarded them, as these were only authorised for wear on full dress uniforms; the ribbons, representing the medals only, being worn on field and Service uniforms. It is now the intention of the War Department to provide for the wearing of medals and decorations as follows :—

In the field no medals will be worn. It is optional with the

THE AIRCRAFT MANUFACTURING COMPANY LIMITED

AIRCO

HENDON, LONDON. N.W. 9.

Chairman and Founder (1911): G. HOLT THOMAS

The Largest Aircraft Enterprise in the World

THE Aircraft Manufacturing Company, which with its associated Companies, is the largest aircraft enterprise in the world, is in a unique position to undertake the construction and complete equipment of aircraft for every kind of commercial, scientific and administrative purpose.

While many firms are dependent upon outside industries for essential parts of their output, the vast Airco resources and experience enable the associated companies to carry out practically every phase of modern aircraft construction in their own works and under their own skilled supervision. The importance of this fact will be appreciated by those responsible for the inauguration and development of public air services.

Among the highly specialised products of the associated Companies are:

HIGH-SPEED AEROPLANES, AIRSHIPS AND KITE BALLOONS, SEAPLANES AND FLYING BOATS, AERO-ENGINES, PROPELLERS, INSTRUMENTS OF PRECISION, etc., etc.

THE AIRCRAFT MANUFACTURING CO., LIMITED.

AIRSHIPS LIMITED. GNOME & LE RHONE ENGINE CO, (Peter Hooker, Ltd.),
MAY, HARDEN & MAY, Seaplane Base, HYTHE. INTEGRAL PROPELLER COMPANY, LTD.
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individual whether or not he shall wear his ribbons. On certain formal occasions the Commanding Officer may require the wearing of medals and decorations. On social occasions their wearing is optional with the individual. On evening clothes, military and civilian, these decorations and Service medals are worn only on the left lapel.

Decorations, Service medals and badges, except aviation badges, will not be worn when equipped for the field, neither will they be prescribed for troops in the field. Officers suspended from rank and command and enlisted men serving sentence of confinement are prohibited from wearing any decorations, medals, badges, or substitutes therefor.

Decorations and Service medals will be worn when in uniform on the following occasions, unless especially prescribed otherwise. On State occasions at home and abroad; when receiving or calling officially upon, or acting as escort or aide to the President of the United States; the sovereign or chief executive of any foreign country, or any member of a reigning royal family; at all official and social functions at the White House; at escort to the Colour.

They may be prescribed by the Commanding Officer on the following occasions, when in uniform: For evening parades, formal reviews and inspections and funerals; on ceremonial and social occasions of a general and formal nature. They may be worn when in uniform, at the option of the wearer, on social occasions of a private nature and on holidays when not on duty with troops under arms.

When decorations and Service medals are worn under provisions of the above paragraphs, all those to which the wearer is entitled will be worn by officers and enlisted men in formation, officers and enlisted men not in formation, including reviewing and inspecting officers and their staffs, may omit the wearing of some for purpose of specially emphasising or giving special honour to those which they individually consider particularly appropriate to the occasion. On evening clothes, military or civilian, only one full size decoration or Service medal may be worn on the lapel; any number of miniatures may be worn, but full size and miniatures must not be worn together on the lapel. Service ribbons may be worn, on the white and Service uniforms. When any decorations or Service medals are worn, all Service ribbons will be removed or hidden from view. They will not be worn on the white mess jacket nor on civilian clothes. Badges, not to exceed three in number, may be worn on white and Service uniforms, but not on white mess jacket nor on civilian clothes. Badges of societies will not be worn with decorations, Service medals or substitutes therefor except at meetings, ceremonies or functions of the society in question. Civilian clothes, lapel buttons may be worn. The wearing of decorations, Service medals or miniatures should be limited to ceremonial occasions, then only when strictly appropriate to the occasion.

A foreign decoration or Service medal will not be worn alone, at least one American decoration or Service medal (or miniature in evening clothes) must always be worn with a foreign award.

A Helium Gas Committee.

The Secretaries of War and Navy have appointed a joint naval and military Helium Board composed as follows: Lieut.-Col. C. de F. Chandler, Chief of the Balloon and Airship Division of the U.S. Signal Corps (Air Service), alternates with Major P. Pleiss as Chairman of the Board. As members, Comdr. A. K. Atkins, U.S.N., and Comdr. H. T. Dyer, U.S.N., serve in alternation. Dr. C. F. Cottrell, Assistant Director of the Bureau of Mines under the Department of the Interior, has been appointed to represent that department, which is closely concerned with the problems affecting the production of helium gas. In his absence the department will be represented by the Chief Chemist of the Bureau, Dr. R. B. Moore. This board is formed "for the purpose of co-ordinating the various helium gas activities and requirements of the various Government Bureaus, including full control over the operation of the present and future Government-owned helium production plants, disposition of helium products, the conduct or supervision of conduct of further experiments undertaken with a view toward increasing the efficiency of the production plants, and to control further steps for conserving such sources of helium as may be deemed expedient."

At a meeting of the Board held on Oct. 23rd it was decided that the Bureau of Mines should conduct an exploration to locate sources of helium gas in the United States. The analysis of all gases supposed to contain workable quantities of helium will take about eighteen months. A helium laboratory is in existence at Fort Worth, Texas, and will shortly be enlarged. Dr. Seibel, who is an authority on helium, is in charge of the analytical work. It is expected that the oil and natural gas production companies in the United States will co-operate in this investigation.

A Gyroscopic Stabiliser for Aerial Cameras.

Dr. A. N. Lucien, Experimental Branch, Photographic Section, Air Service, has designed a gyroscope with a new dampening device. The model at present under test stabilises a small 5 in. by 7 in. aerial camera swung in gimbal brackets. The tests shows that the camera remains in the horizontal plane whatever the aeroplane may be doing at the moment. The value of such a device in aerial survey work cannot be exaggerated.

PROHIBITED AREAS.

The following is taken from the "London Gazette" of November 18th:—

ORDER OF THE SECRETARY OF STATE UNDER THE AIR NAVIGATION ACTS, 1911 TO 1919.

In pursuance of the powers conferred upon me by the Air Navigation Acts, 1911 to 1919, and all other powers enabling me in that behalf, I, The Right Honourable Winston Spencer Churchill, one of His Majesty's Principal Secretaries of State, by Order, make the following regulations amending the Air Navigation Regulations, 1919:—

1. Regulation 1 of the Air Navigation Regulations, 1919, shall have effect as though the following provisions were substituted for subsection (7) thereof:—

(7) The aircraft shall not land in any prohibited area as defined by this Regulation, and shall not fly over such area at a lower altitude than six thousand feet.

2. Schedule VI of the Air Navigation Regulations, 1919, shall have effect as though the following were substituted for paragraph 1 thereof:—

1. Each of the places named in the following list, as described therein, shall be a prohibited area:—

Orkney Islands.—An area enclosed by straight lines joining the following points:—Tor Ness, Rora Head, Inga Ness, Mull Head, Old Head.

Cromarty.—Seven statute miles in all directions from Newball Point (opposite Invergordon).

Firth of Forth.—An area enclosed by straight lines between the following places:—Hill House (one mile south of Dunfermline), Blackness Pier, Dalmeny Church, Inchmickery, Hallcraig Point.

Harwich.—Two statute miles in all directions from Parkeston Pier.

Osea Island.—Three statute miles in all directions from the centre of Osea Island.

Sheerness.—Three statute miles in all directions from Garrison Point, excluding Grain aerodrome and all land belonging thereto.

Chatham.—Three statute miles in all directions from Hoo Church.

Dover.—Three statute miles in all directions from Dover Castle.

Portsmouth.—Two and a half statute miles in all directions from Dockyard Clock Tower.

Poole Harbour.—Three statute miles in all directions from Lychett Minster Church.

Portland.—Two statute miles in all directions from Portland Castle.

Devonport.—Two statute miles in all directions from a point half a mile north of Stoke Church.

Pembroke.—Two statute miles in all directions from Wear Point.

Cork Harbour.—Two statute miles in all directions from Spike Island Fort.

W. S. Churchill,
One of His Majesty's Principal Secretaries of State.
Air Ministry, London, November 17th, 1919.

LORD WEIR AND THE W.R.A.F.

Among those made honorary graduates of Glasgow University on Nov. 19th were the Lord Weir and Commandant Dame Gwynne Vaughan, D.B.E. In the course of a long speech proposing "Town and Gown," Lord Weir said that the honour conferred upon him was a reflection of the admiration, pride, and wonder universally felt for the heroic work of the Air Force. He also heartily endorsed the honour conferred upon Dame Gwynne Vaughan for her wonderful work in the Women's Royal Air Force. No one ever commanded a corps composed of more honourable, gallant and devoted women, with higher character or principle, than the girls of the Women's Royal Air Force.

INTELLIGENT ADMINISTRATION.

An ex-R.A.F. officer tells a delightful story of the modern R.A.F. as related to him by a much-afflicted C.O.

One of the administrative officers under the said C.O. received a wire the other day to send four men to the Airship Station at Fulham, an obvious mistake for the famous Station at Pulham, Norfolk. The administrative officer being a thoroughly disciplined and obedient person duly sent the four men to Fulham. The teller of the story remarks: "Imagine these four men wandering up the Fulham Road, looking for an airship station. It is a good illustration of the idiocy of giving administrative commissions to flying officers or conversely forcing administrative officers to fly."

It is alleged that when the hero of this story was admonished for making such an obvious mistake he rushed off for the wire and pointed out the F where the P should have been, and stated that he could not be responsible for the mistakes of the Post Office.

A RESIGNATION.

Mr. E. W. Roberts (late Lieut., R.A.F.) is, owing to pressure of work, resigning his position as Secretary of the ex-R.A.F. Officers' City Luncheon Club.

SUNBEAM-COATALEN AIRCRAFT ENGINES

contributed in no small measure to the aerial supremacy which was largely responsible for the Victory which crowned the Allied arms.

And in peaceful times, these Engines will continue to add to the fame of their name.

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MOTOR CAR CO.,
LTD.,
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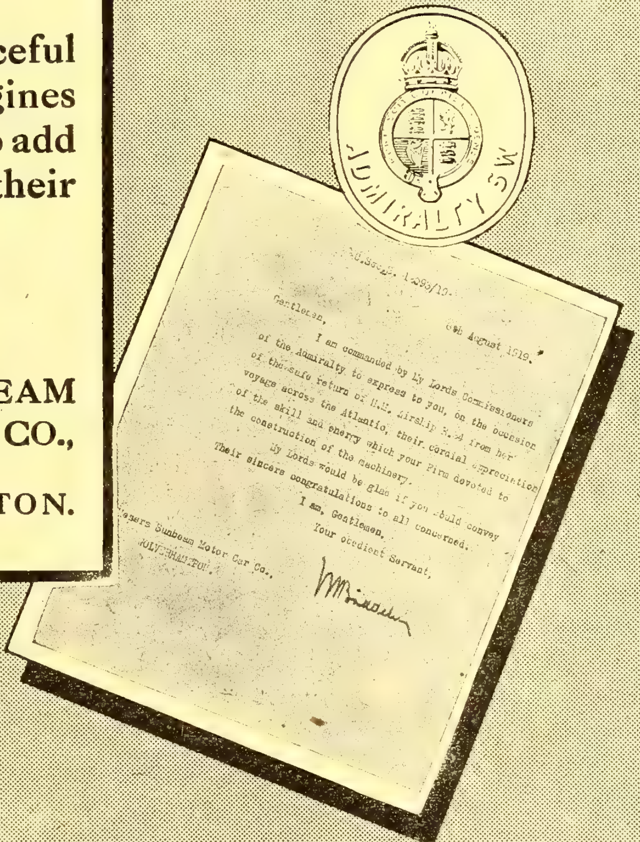

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Gentlemen,

6th August 1919.

I am commanded by My Lords Commissioners of the Admiralty to express to you, on the occasion of the safe return of H.M. Airship R.34 from her voyage across the Atlantic, their cordial appreciation of the skill and energy which your Firm devoted to the construction of the machinery.

My Lords would be glad if you would convey Their sincere congratulations to all concerned.

I am, Gentlemen,
Your obedient Servant,

Messrs Sunbeam Motor Car Co.,
WOLVERHAMPTON.

COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

Communication with Aircraft.

The following "notice to airmen" was issued by the Air Ministry on November 24th :—

The Radio Telephony Stations at the Aerodromes at Hounslow and Lympne are now working on 900 metre wave length. The registration marks of aircraft should be used as the call signs in making or receiving signals by wireless telegraphy or other methods of communication, except when opening up communication by means of visual signals, when the usual methods will be employed.

THE CONTINENTAL AIR SERVICES.

The Airco Service.

Sixteen flights have now been prevented and eight interrupted by the weather on the Airco London-Paris Air Service. Before each machine starts on its journey to France, it is brought round in front of the customs offices, so that passengers can be seen climbing aboard, and cannot do any smuggling. A medical officer, R.A.F., is in attendance at the aerodrome and examines all foreigners entering the country by the air route.

This week the times of the Bréguet mail-carrying machines have been placed in the table with the Airco machines.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Nov. 18th	D H. 9	Lt. Shaw	12.35 p.m.	2.35 p m.			Mail
	Breguet	M. Bajac			12 30 p.m.	3.00 p.m.	Mail
	D.H. 16	Capt. Baylis			12.30 p.m.	3 05 p.m.	1
Nov 20th	Breguet	M. Bajac	12.40 p.m.	3.00 p.m.			goods
	D.H. 16	Lt. Campbell-Orde	12.45 p.m.	2 40 p.m.			3
	D.H. 4a	Lt. Lindley	12.55 p.m.	2.55 p.m.			1 and Mail
	D.H 4a	Lt. Powell			12.30 p.m.	3.05 p m.	1
Nov. 21st	D.H. 9	Lt. Bradley	12.55 p.m.	3 00 p.m.			1 and Mail
	D.H. 4a	Lt. Tebbit			12.30 p.m	3.25 p.m.	1
Nov. 22nd	D.H. 4a	Lt. Armstrong	12.45 p.m.	Landed L'mpne			Mail
	D.H. 4a	Lt. Lawford	1.10 p.m.	Landed L'mpne			1
Nov. 23rd	D.H. 9	Lt. Shaw			1.00 p.m.	3.30 p.m.	2

On Nov. 17th and 19th no machines started from Hounslow or Le Bourget owing to adverse weather conditions.

On Nov. 20th a Breguet machine, carrying the French mails, left Le Bourget for Hounslow, but was forced to land before reaching the French Coast owing to some minor mechanical defect.

On Nov. 21st a Breguet machine carrying the mails from Paris was forced to descend at Lympne and the mails were brought to London by rail.

On Nov. 22nd the DH4a, piloted by Lt. Lawford, crossed the Channel, but on reaching Calais encountered such bad weather that the pilot deemed it advisable to return. Both the machines which landed at Lympne returned to Hounslow on the following day.

The Handley Page Service.

On Nov. 18th Capt. Davies flew a Handley Page machine from London to Brussels, carrying two passengers and 1,201 lb. of freight. Mr. Pager piloted a machine with two passengers and 238 lb. of freight from Lympne to Paris, and at three o'clock in the afternoon a Handley Page machine alighted at Hounslow from Paris with one passenger and 200 lb. of cargo.

During the week ending Nov. 19th, on the London-Paris service, 17 passengers and 1,224 lb. of freight were carried. Severe rain and windstorms made flying totally impossible on two days out of the week.

During the last 10 weeks a total number of 554 passengers and 9,637 lb. of freight have been carried on this service, and a distance of 26,850 miles covered. This has been accomplished without one accident, although the majority of the flights had to be carried out in bad weather.

On the London-Brussels service during the week ending Nov. 19th 14 passengers and 5,432 lb. of freight were carried.

A total of 206 passengers and 16,036 lb. of freight have been carried on this service during the last seven weeks, a distance of 12,850 miles being covered.

There is an increasing demand for the conveyance of freight from London to Brussels in Handley Page aeroplanes. Consignments of cloth, drapery, carpets and handkerchiefs are being carried to Belgium for sale in the stores of that city and Antwerp. Manufacturers in the North of England are utilising the service for the rapid conveyance of their products to the Continent.

"Carrying carpets to Brussels" is reminiscent of "Carrying coals to Newcastle."

On Nov. 20th Mr. Massot flew to Paris in 2¾ hours with a passenger and 428 lb. of freight. Lieut. Hope flew from Hounslow to Brussels with two passengers and 1,243 lb. of cargo, mostly drapery and woollen goods.

Bournemouth.

Weather permitting, the Avro Air Fleet will visit Bournemouth on Saturday, 29th, and Sunday, 30th insts. Exhibitions of flying will be given on both afternoons, starting at 2 p.m. There will be a sham fight, trick flying, and Miss Nellie Gibson will make her parachute descent. The Avro "Baby" will take part in the performance, and the Limousine will be there. The arrangements are in the hands of Mr. E. J. Hucks.

Bradford.

In spite of the heavy snow and gales of wind encountered during the week ending Nov. 23rd, the Berkshire Aviation Co. gave a flying week at the Leeds Road aerodrome, Bradford, without interruption. Many passengers were carried.

During the past six months the Berkshire Aviation Co. have carried more than 4,000 passengers, and the distance flown exceeds 18,000 miles. During this time only one minor mishap occurred, in which nobody was even scratched.

Brooklands.

A correspondent writes :—One hears various rumours of private owners of aeroplanes taking over hangars on the Brooklands aerodrome, but there is nothing at present to show that such is the case.

At the Vickers works they are reported to be constructing an amphibian, a biplane, fitted with floats and landing wheels, which is to be tested soon at Brooklands. Sir John Alcock now has a residence in Weybridge, and will be engaged in testing work.

Contrary to what has hereinbefore appeared, the Air Navigation and Engineering Co. (Blériot's), of Addlestone, have not entirely stopped aircraft work. The works are reported to be devoting a small part of their energies to some special type of aeroplanes, of which no details are to hand.

A two-seater machine of large dimensions, but of orthodox Martinsyde design, fitted with a 450 h.p. Napier "Lion" engine, is being constructed by Martinsyde, Ltd. One is at present ignorant of the purpose for which it is being built.—J. F. S.

London.

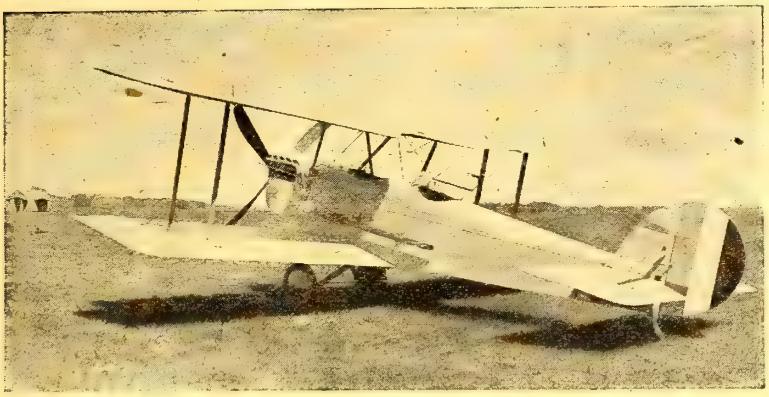
Hounslow.—On Nov. 21st, two Airco DH9a biplanes, fitted with Napier Lion 450-h.p. engines, left Hounslow at 1.55 p.m., piloted by Lieuts. Robins and Game, for The Hague. One machine carried two passengers and the other their luggage.

Middlesbrough.

The Berkshire Aviation Co. are giving flights at a site at Middlesbrough this week ending Nov. 30th.

IRELAND.

Sanction was granted by the Cork Corporation on Nov. 14th to A. V. Roe and Co., Ltd., for the erection of an aerodrome in Cork : The town is to be used as a base for the air services to connect the principal towns and watering places.



THE BOULTON & PAUL—P. 9.

An Aeroplane which is a Sound Commercial and Private Proposition

In this P. 9 Machine we have, we feel, solved the problem of providing an Aeroplane which is a sound business proposition—and which combines with low cost the great essentials for Commercial and Private use. All our great resources of material and craftsmanship have been utilised. Scientific Research and Experiment by a staff associated with flying from its beginnings coupled with the great Experience gained through the building of thousands of Aeroplanes during the War, have been concentrated in the production of this P. 9 Model.

It is a Two-Seater—Single Engine Tractor—which has attained on test a speed of over 100 miles per hour.

Its outstanding features are :—

CHEAP AND EASILY HOUSED. The Initial cost is extremely low—£700—and the cost of running for a machine of this type and performance is reduced to a minimum. Owing to its small size it is easy to handle on the ground and requires but little accommodation. The principal dimensions are: Span, 27 ft. 6 in.; Length, 25 ft.; Height, 10 ft.

EASY TO FLY. The P. 9 has a big speed range, and low landing speeds, and this combined with Stability at all trimming speeds and well-balanced controls, allows the machine to be flown for long periods without undue fatigue. It also gives the maximum of Safety possible.

COMFORT AND CONVENIENCE. The comfort of the Pilot and Passenger has been specially considered. Each Cockpit is roomy and fitted with our special Seats. Controls for both Flying and Engine are fitted in the front and rear Cockpits to enable the machine to be flown from either position. The exhaust from engine is discharged behind the rear Cockpit giving a silencing effect and freedom from fumes. Two standard cases are provided for luggage and form part of the fairing immediately behind the rear Cockpit.

The uses to which this compact and efficient machine can be put are wide and various, and will suggest themselves to those who have been awaiting the stage of Aeronautical Development now reached by the P. 9. It can be used for dozens of Commercial Purposes. The same type carried photos from R. 34 direct to London. It has been sent to Australia for Sheep-runs—and will soon be in use in various parts of the world for Exploring Uncharted Territory, Examining Timber Tracts, Fighting Forest Fires, Carrying Mails to Distant Mines, Transition of Colonial Mails to Mail Steamers, and for General Patrolling and Police Purposes.

£700 **If you are interested—write for full particulars. State your needs or purpose, and our engineers will consider every detail closely—to advise soundly.**

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SOUTH AFRICA.

The first flight made by South African Aerial Transports, Ltd., was advertised to take place at Baragwanath Aerodrome (Johannesburg) on Oct. 25th, when the Mayor of the Town was to perform the naming ceremony and make the first flight.

The hours for flying at the aerodrome are from 9 a.m. to 11 a.m. and from 4 p.m. to 6.30 p.m. on Mondays, Tuesdays, Thursdays, and Fridays, and from 2.30 p.m. to 6.30 p.m. on Wednesdays, Saturdays, and Sundays.

Major W. E. Young, D.F.C., of the company, is O.C. at Durban. He has a new 110-h.p. Le Rhône Avro biplane, and flying was to start in the first week of November. The following matter is extracted from the Johannesburg "Star" of Oct. 30th:—

Flights are to be made at Maritzburg and a few other Natal centres, but the home of the machine is to be Durban. The original site selected not being ready, Major Young is endeavouring to obtain the use of the polo-ground as an aerodrome. If he succeeds, the machine will be housed in a shed, it not being expedient to construct a permanent hangar. The immediate programme so far as Durban is concerned is a series of passenger flights.

Major Young said that projected routes for regular services have been prepared as follows:—Johannesburg-Delagoa Bay *via* Imbabane; Johannesburg-Capetown *via* Kimberley-De Aar-Beaufort West; Johannesburg-Durban (possible stop at Newcastle).

Branch services: Johannesburg-Pretoria, Kimberley-Bloemfontein, De Aar-East London, De Aar-Port Elizabeth. It is intended to run two-engine machines, each with a capacity for 14 passengers, with a cruising speed of 90 to 100 miles per hour. The fares are difficult to estimate, but may average £15, though this figure will be reduced as support becomes assured.

The first flight was made by Major A. Miller. He flew from Johannesburg to Durban carrying a special edition of the "Johannesburg Star." General Smuts sent a message of congratulation on the flight to Major Miller.

DENMARK.

A Flight to Sweden.

Lieut.-Col. G. L. P. Henderson arrived at Copenhagen on Nov. 20th with his Armstrong-Whitworth biplane (160-h.p. Beardmore). He flew from Hamburg via Lybeck in two and a half hours. He intended to fly to Stockholm on the next day.

The Danish Air Traffic Co.

After much international and other negotiation, the Danish Air Traffic Company and Air Express have announced that they will start a regular service between Copenhagen and Warnemunde on Dec. 1st.

FRANCE.

The Paris-Melbourne Flight.

A Reuter message from Paris dated Nov. 24th stated that M. Poulet, who is still at Karachi, is receiving instructions from the British authorities regarding the route he is to follow in the further stages of his flight to Australia. M. Poulet has announced that if he arrives safely at Melbourne, after his machine has been overhauled, he will attempt to make a tour of Australia, over the desert parts of which no flight has yet been attempted.

GERMANY.

A New Record.

A message from Berlin states that the airship "Bodensee" made a new record on Nov. 20th. The journey from Friedrichshafen to Berlin was accomplished in three and three-quarter hours.

The Danish correspondent of The Aeroplane writes:—

The Effect of the Railway Stoppage.

The ten days' stop of all passenger trains on the German railways appears to have affected German commercial aviation similarly as the recent English railway strike stimulated British aviation, within the limits set by the reduced quantity of German benzole available which results from the low coal production, again the effect of strikes. Though the exact duration of the period of the cessation of railway transport facilities was known in advance, German organisation, skill and enterprise seems for once not to have come fully forward.

A private Berlin telegram to the Copenhagen news-sheet "Politiken" of Nov. 8th announced that activities on the regular air lines were to be restarted on the next day, mainly for mail and newspaper transport, though it was hoped, and depended upon negotiations with the fuel suppliers, that aerial passenger travelling could take place also.

It was announced beforehand that the airship "Bodensee," running on its regular service between Spandau by Berlin and Friedrichshafen, but not landing intermediately at Munich on the trip, would during the period be the chief mail link between central and southern Germany. However, it appears now that the airship has been in need of some overhauling—perhaps as a result of recent unsuccessful storm landing efforts at Berlin and ultimate successful emergency one at Magdeburg, for in the telegram referred to above it was reported that a flight of the airship to Friedrichshafen without passengers, but loaded with 2 tons of mail and parcel-post for South Germany, was likely, and that it would be ready after a short stay at the yard.

It is announced also that the demand for aircraft is increasing, artists requiring their services chiefly.

The lines to be restarted by the "Deutsche Luftrederei" were: Berlin-Johannisthal to Leipzig, Breslau, Hamburg, and Warnemünde. The latter forms, with the Danish ferry service to Gedser, the chief route to Scandinavia. From Warnemünde seaplanes were to link up to Sassnitz for the Swedish Trelleborg ferry line.

Rumpler Werke Aktien Gesellschaft were also to run two services, Berlin-Augsburg-Munich and Berlin-Leipzig.

The First After-War Prize.

Before the war General Direktor Edmund Rumpler offered a complete Rumpler "Dove" monoplane (which was never won) to the first pilot to fly from Berlin-Paris within 24 hours on an aircraft from his works. He has now handed in the first German after-war aviation prize of 20,000 marks to the Air Sport Commission, who will soon propose how the money is to be spent.

Fighting with Camera Guns.

An enterprising company, the Messter Optikon Film Co., has started photography fighting to employ the idle scout machines and their pilots in aerial show fighting, as demonstrated at the late Copenhagen aero exhibition. A Dutch branch has also been formed. A camera is combined with a gun, and 400 shots are fired per minute—i.e., one for every four revolutions of the screw. The film is marked with a cross where hit, and a combined watch registers at the same time the exact time with the accuracy of one-fifth sec.—Hi.

ICELAND.

Capt. Cecil Faber, of the Danish Aviation Co., and late R.A.F., has just returned to Great Britain from Iceland, where he has been conducting an interesting experiment in popularising aircraft. The Danish Company sent him out there with a standard 504K Avro and two English mechanics, who had also served in the R.A.F. They established themselves at Reykjavik, and on September 3rd began to take up passengers.

The Icelanders had never seen an aeroplane before, so it was to be expected that they would hesitate at first to entrust themselves to such an unfamiliar contrivance. However, all things considered, they came forward in fair numbers to make flights. In three weeks 140 passengers were taken up, including several old ladies of 60 and upwards.

Capt. Faber remained there for three weeks, and during that time the weather was not all good. It was often gusty and there was a certain amount of rain. But the Avro behaved splendidly. There was no mishap of any sort, and none of the spares for either machine or engine had to be used. Consequently the first impression made on the islanders has been distinctly good.

Iceland seems to offer a very good field for the commercial use of aircraft. All the towns are on the coast, and communication is by steamer. It now takes two days' steaming to get about a third of the way round the island. By air the same journey may be made in four hours. The chances of aquatic aircraft seem to be particularly good.

ITALY.

The Italian correspondent of The Aeroplane writes:—

Trade Unionism for Aviators.

Attempts are being made from various centres to band together flying people, the better to move to the attack against the diffidence and sloth of the unenlightened, whoever and wherever they may be.

Postal Activities.

The daily postal service from Sardinia to Campiglia Marittima, Pisa, is now running again and a certain amount of flying duly controlled is being done, though the flying veto has not yet been removed.

The aeropost, carried on since July, 1918, by the 280th Squadron, under the orders of the Admiralty, from Milazzo to the Eolian Islands is now to be extended to all the various islands of the group, Lipari, Stromboli, etc.

Slipways are under construction at both the above places and are to be of a permanent nature in view of their evident usefulness for future inter-continental traffic. So the "Gazzetta dell'Aviazione."

G R

By direction of the Disposal Board

AIRCRAFT DISPOSAL DEPARTMENT

MINISTRY OF MUNITIONS.

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A Flying Bill.

A Bill dealing with flying is likely to receive the Royal signature in a few days. It merely regulates things on the lines of the decisions taken by the Fédération Aeronautique.

A Fatal Accident.

Lieut. Frank Rudorfer was killed while putting a S.V.A. through her acceptance tests at the Pozzo Strada aerodrome at Turin last week. As before stated, Ukrainia is buying some ten or twelve of these machines, and Rudorfer is thought to have been the usual victim of a belt coming unhasped when doing a steep turn. Anyhow, he fell out, and the machine after planing down landed badly.

The Fiat Output.

The Fiat's B.R. has now a big sister which is thinking of taking the wind out of Jules Verne's sails on a globe-circling trip shortly. She is said to have a tank capacity of 5,000 kilometres. Ask Brack-Papa! By-the-bye, two of those 700-h.p. engines would make a nice power plant for the first real aero-char-à-bancs which happens—whenever it does.

More Records.

As predicted in my last notes, Ing. Marchetti's new M. Vickers-Terni biplane, with 260 S.P.A., has beaten all climbing records at the aerobatics camp, Monte Celio, Rome.

The figures published are confounding, 5,000 metres in 11 minutes being mentioned in one report. The day was perfectly fine and calm, and the Aero Club's representatives checked matters. Serjt. Elias Luit was, as before, the pilot. One congratulates the inventor, anyway. The lines of the eel-like body alone are a fitting monument of a lifetime spent at work.

Racing in 1920.

The famous Circuit of Brescia is to be revived next year with a really novel and useful programme. Two races only: A "Maximum Speed Variation" contest over a closed circuit of 1,000 kilometres with a compulsory amount of useful load, and a "Speed Contest for Pluri-motored Machines."

This last will be flown off in three heats. No. 1, 400 kilometres, using all motors. No. 2, a similar distance, but bi-motored machines to use only one, and tri-motored craft only two of their engines. No. 3, same distance, bi-motored machines using motors alternately and tri-motored 'busses only two, changing about. During No. 2 heat, machines are to reach at least 2,000 metres. One lives in hopes of seeing the Schnieder Cup flown for at Venice next September, too. Altogether the New Year promises to be interesting.

Gabardini Products.

When at Cameri the other day, Ing. Gabardini told me he was at work on plans for a tandem-plane. Also I saw the big vertical engine for the new Gabardini projectile. Although it was almost dark, he asked Sig. Zanibelli—who began flying at 16, by-the-bye—to take up the 59 biplane which I had never seen in the air. Signor Zanibelli graciously set out to do tonneaux and similar circus tricks to enlighten my darkness. Like all the other Gabardini stuff, the machine can certainly fly. Stretching himself out à la fingerpost on one leg, Chief Pilot Landini measures from toe to fingertip almost the whole length of the machine's body, if one excepts the rotary engine's cowl. The total surface is called 9 square metres.—T. S. H.

A Trans-Alpine Flight.

A very difficult flight over the Alps was accomplished on Nov. 19th, when an aviator flew with a passenger in an Italian hydro-aeroplane, 80 h.p. engine, from Locarno to Zurich. There was a very strong headwind and a heavy snowstorm was encountered, but a cinema film was taken of almost the entire journey.

A World's Record Claimed.

Messages from Rome state that on Nov. 20th at the Montecelle aerodrome Elia Luit on a Marchetti aeroplane beat the world's record for speed by flying 171½ miles in an hour. With a new propeller it is hoped that a still greater speed may be achieved.

JAPAN.

During an experimental aerial-post service between Tokyo and Osaka, postage stamps were issued with an overprint representing a monoplane in flight.

NORWAY.

The Danish correspondent of The Aeroplane writes:—

"Det Norske Luft Rederi" (The Norwegian Air Navigation Co., Ltd.) has asked the Trade Department for a subvention of 1,2 million crowns (£66,700) on the finance bill for 1920-21. If the subsidy is granted they will, from May 1st, 1920, start a North Sea service from Stavanger to Scotland, as a link in the later northern European air line from London to Petrograd.

They will also start a coastal route, Christiania to Stavanger and a Christiania-Copenhagen connection over Gothenburg in connection with the Swedish and Danish air navigation companies, each sharing one-third of the traffic. Stops will be made at Arendal and Christianssand on the Stavanger route (see map on page 1194, The Aeroplane, issue of September 24th). The air services on both the last-mentioned routes will be run every week-day, even if to be run at a loss for a start.

Norwegian detailed cost estimations have been set up for the two services, the total expenditures on plant and building being calculated at 1,750,000 crowns (£97,222), in which sum nine 300-h.p. aeroplanes are included, reckoned each at 100,000 kr. (£5,555). Further, the stations are calculated to cost 310,000 kr. (£17,222) and 150,000 kr. (£8,333) respectively to erect.

The operating costs are worked out at 137,650 kr. (£7,647) monthly, all included. The operating cost per kilometre works thus out at 5,20 kr. (5s. 9⅓d.). Flying all work-days and with a reliability factor of 80 per cent., twenty flights should be carried out each way per month.

The share of the Norwegian company on the Copenhagen route is to be thirteen trips, the expenses on each of which are calculated at 2,600 kr. (£143). On the profits and revenue side three passengers are reckoned with at each trip, a fare of 250 kr. (£14), or 750 kr. (£42).—Hr.

POLAND.

One learns from the German paper, "Luftpost" that an Aero Club is being formed in Posen. The Minister of Posts and Telegraphs in Poland has taken the notable step of making use of aeroplanes for transport work.

A Polish commercial firm has come to an arrangement with the British Handley Page Company to undertake the technical management of an air line running between Dantzig, Warsaw, and Krakau. It is said that each transport vehicle will carry about 1,500 kilos. of load.

PORTUGAL.

Mr. F. P. Raynham, who is demonstrating with a Martinsyde F.4 (300-h.p. Hispano-Suiza), on Nov. 11th flew from Madrid to Lisbon in 3 hr. 5 min. The distance is some 360 miles. The weather conditions were bad and there was a strong wind against him.

It is said that this machine is the first to fly into Portugal, and its arrival has created a great deal of excitement. Mr. Raynham landed at what is going to be the International Aerodrome, but which is now a ploughed field. He was to make a formal entry into the Military Aerodrome escorted by the Portuguese Flying Corps *en masse*.

Martinsyde, Ltd., hope to do a little business in Portugal and say that there appear to be splendid opportunities for aircraft development in the country and also in Spain, but very little money.

SPAIN.

An aeroplane flown by the French aviator, M. Bourgeois, fell to the ground from a height of 300 metres at the Andorra aerodrome (near Lisbon) on or before Nov. 21st. M. Bourgeois was killed.

The "Vickers-Vimy-Rolls" aeroplane which recently made a tour of the Continent is now at Madrid giving exhibition and passenger flights. His Royal Highness Prince Alfonso de Bourbon, cousin of His Majesty the King of Spain, was taken up as a passenger on Thursday, Nov. 20th, in this aeroplane. He expressed great satisfaction with the trip.

SWEDEN.

The Danish correspondent of The Aeroplane writes:—

New Flying Stations.

The Swedish Air Navigation Co. has hired space for seaplanes at Askims Fjord, and by Tingstadssvarren for land-going aircraft, for the experimental Norwegian-Swedish-Danish air service, planned for next spring. It is hoped that a municipal flying station will be laid out, for which the technical and financial calculations have been given under Norway.

A correspondent writes from Sweden on Nov. 13th:—

The Italian Presentations.

The only thing of any importance of late is the propaganda work done by the Italian pilots last week. They finished up here by a big show, in which they bedecked two of their boats with the Swedish colours, and said a few words on the great pleasure they had in presenting the King of Italy's greetings to the Swedish people, and also in presenting two of their boats to the Swedish Navy.

The Count had practised his Swedish and made the speech in that language. He was later presented in return with the Order of Wasa (First Class). The other two pilots were also presented with various Orders, and I believe also the mechanics. They have all left for Finland now, and are about to present their last machine to that Government.

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THE WEEKLY COMMENTARY.

The German account of the Rolls-Royce aero-engine, which began in last week's issue, is completed in the following pages.

It has been necessary to interrupt temporarily the article on the experimental work of the Isle of Grain Experimental Station. Some account of the work connected with the development of machines for shipboard use will be given in a later issue.

Photographs of some machines built by the German Mercédès-Daimler Motoren Gesellschaft are given on page 1804. These machines are noteworthy in that they employ an engine of the 8-cylinder Vee type—a class of engine by no means usual in German aero practice.

A note on the applications of meteorology to the running of commercial air services by the meteorologist of the Air Transport and Travel Co. appears on page 1806.

A GERMAN APPRECIATION OF THE ROLLS-ROYCE AERO ENGINE.

TRANSLATED BY ERIK HILDESHEIM, COPENHAGEN.

(Continued.)

The cylinders are made of steel, built up of several parts. To avoid large masses of metal round the valve seats, which are found in many models, short sockets are provided on the cylinder into which the valve caps are inserted. Hereby the welding is moved farther above the valve seats, improving thus the cooling efficiency of these important points.

For the inlet valve the valve stem guide is made in one part with the valve cap, together with a boss for the bolt holding the camshaft case. These parts are made separately at the exhaust valve and welded on to allow of cooling the stem guide. Special bronze bushes are pressed into the steel guide. Round the cylinder is a water-jacket pressed from sheet steel. All welding seams have been made very clean, no more welding material being employed than is absolutely necessary to obtain a tight and rigid welding seam. The plug sockets are screwed into the cylinder from above and welded to the water-jacket. No compression cocks are provided. The inlet and exhaust port flanges are screwed on to the pipes forming the valve ports.

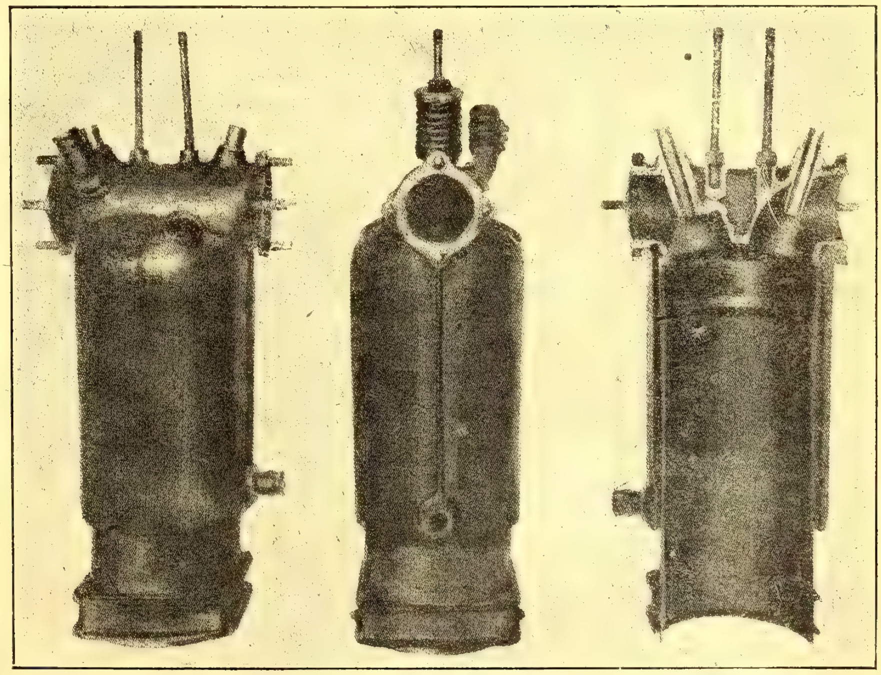
For mounting on the crankcase a very strong double flange is machined from the solid at the lower end of the cylinder, which scheme cannot be recommended too highly. The cooling water enters through a pipe at the lower end of the water-jacket from outside, leaving at the highest point of the water-jacket at the inner side of the angle between the cylinders. All outlet pipes of each cylinder row connect to a common water-pipe.

Inlet and exhaust valves are similar. Their form is the so-called umbrella model, which is only rarely to be found in aero-engines, though it produces very good flow conditions for the gases. The stem of the valves is lightened by being drilled, and a tempered piece of steel is screwed into the stem end and locked by a split pin to take the blows of the tappet. The washer for the two springs is screwed on and locked by a castle nut. The lower spring washer is a loose fit on the valve stem guide.

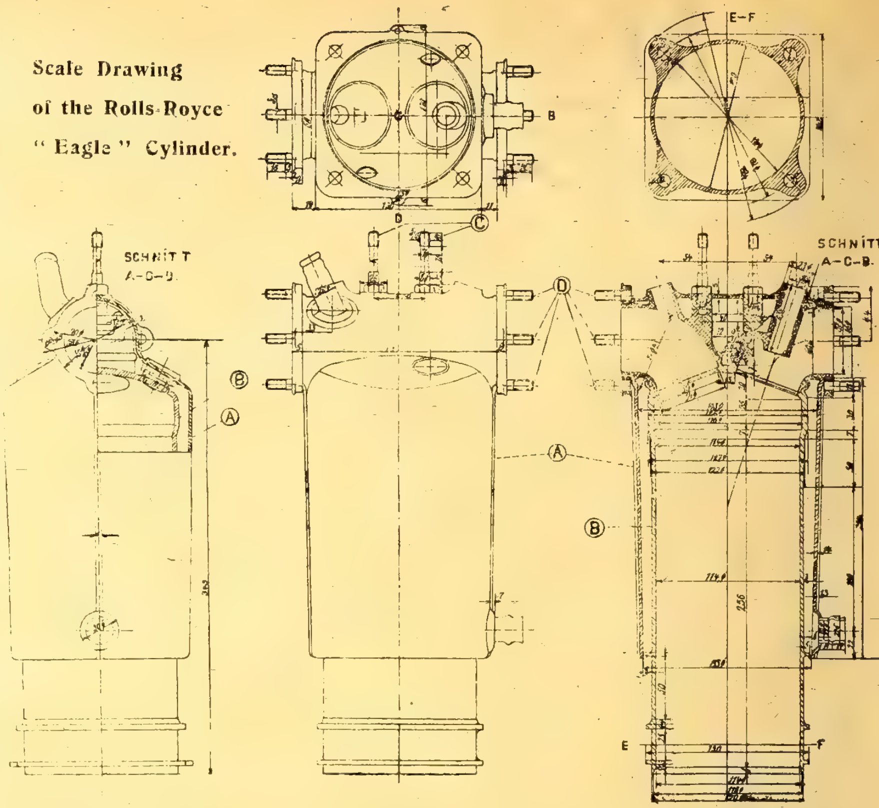
The valves are controlled by means of a camshaft, resting in a bronze case, made of three parts. It is shown with all details in a figure, so that a further description is not needed. No half-compression arrangement is provided, and in view of the small dimensions of the cylinders this can be spared.

Automatic lubrication takes place through the hollow camshaft. At the front end of the case a flow of the oil downwards back to the crankcase is provided, while at the rear side the oil can return through the case of the driving shaft.

In older specimens the air-pump for the petrol pressure or the tachometer drive was mounted at the front end of the camshaft, but these parts have later found their places at the rear part of the case, which gives better protection of these parts and shorter lengths of pipes and shaft connections.



End, Side and Sectional Views of Cylinder of an "Eagle" Rolls-Royce engine.



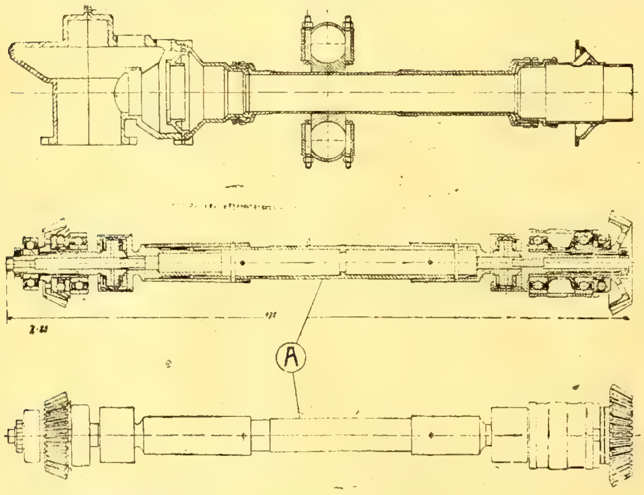
Scale Drawing of the Rolls-Royce "Eagle" Cylinder.

The opening times and movements of the valves are good, which, combined with the high compression ratio, explains the favourable mean pressure of 8.7 kg. per sq. cm. for the 352-h.p. model.

The camshaft drive contains a number of interesting intermediate parts. At the rear end of the crankshaft a worm-wheel is coupled with the shaft by means of a sprung clutch and a cone hub. The aim of this arrangement is to keep harmful torsion oscillations from the camshaft drive and the auxiliary apparatus driven by the worm-wheel

This worm-wheel has 24 teeth and engages a second one with 16 teeth that is mounted on a cross-shaft. Beside this worm-wheel, two spur bevel-wheels with 20 teeth are mounted on the ends of the cross-shaft and drive the intermediate shafts driving the camshafts through bevels of 30 teeth. The transmission first to a high number of revs. and then to a low one again is required, as two of the four magnetos are driven from the cross-shaft and have to rotate at 1½ times the number of revs. per min. of the crankshaft. The camshafts are driven from these intermediate shafts by bevel-wheels of 50 and 25 teeth.

The intermediate shaft is a very clever and well-founded design. To keep an exact engagement of the spur bevel-wheel certain always, in spite of heat elongation and vibrations, this shaft is made to swivel in all directions. The vibrations are made harmless by top and bottom universal joints; to side movement attention is paid by means of a sliding splined hub construction, which is repeated in almost all drives and possesses many advantages compared with the cone and key locking, and with careful manufacture affords the highest possible reliability. The correct combination is always made certain by varying the width of the grooves. Lubrication of the universal joints is by the oil from the camshafts returning through the shaft and its case. In the same way attention has been paid to the circulation of the oil in the design of the intermediate case.



The Universally Jointed intermediate shaft driving the camshaft, and its casing.

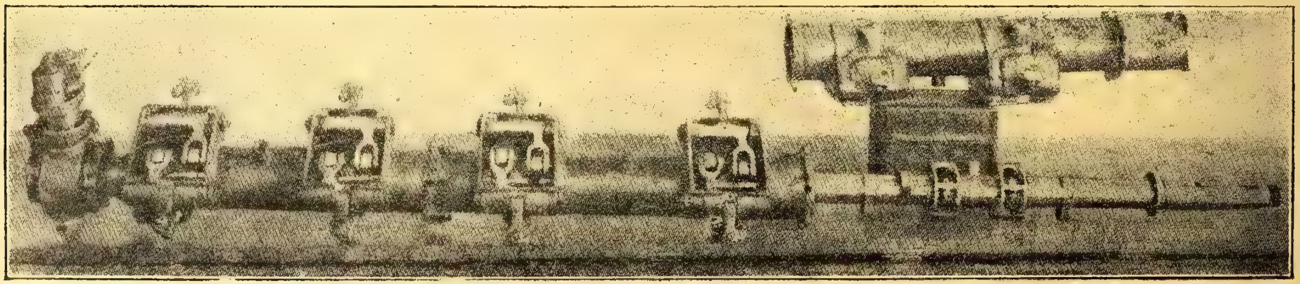
One pair of magnetos is driven from the cross-shaft through a splined coupling and a spring buffer. The other pair of magnetos is driven by a second cross-shaft by the interposition of an intermediate shaft. The shaft arrangement of the second magneto drives is similar to the first one. This same cross-shaft serves at the same time for the drive of the tachometer and the air-pump, both of which are driven by worm-wheels.

The synchronised gun gear is made for two guns, and is driven from the rear end of the crankshaft. Running unengaged on the shaft the cam disc is driven at the speed of the airscrew by two pairs of gear-wheels, which are, together with the whole gearing, enclosed in an aluminium case. The cams operate each of the two trigger levers twice during each revolution. The contact points of the lever rollers with the cam disc subtend an angle of 153 deg., which depends upon the arrangement of the guns on the aeroplane.

The water-pump is also mounted on the rear part of the crankcase, and is driven by the worm-wheel on the crankshaft, with a transmission ratio of 1 to 1.5. The rotor is provided with double-side tread, so that the normal stuffing-box has only to tighten against suction pressure, which can be reduced to a minimum by a suitable arrangement of the cooling water circulation. Thus the risk of leakage and loss of water is very small. The rotor wheel with its shaft is made in one piece. On both sides of the rotor wheel the shaft runs in bronze bearings, lubricated by grease cups. The mounting of the pump with its drive on the crankcase is made in two parts.

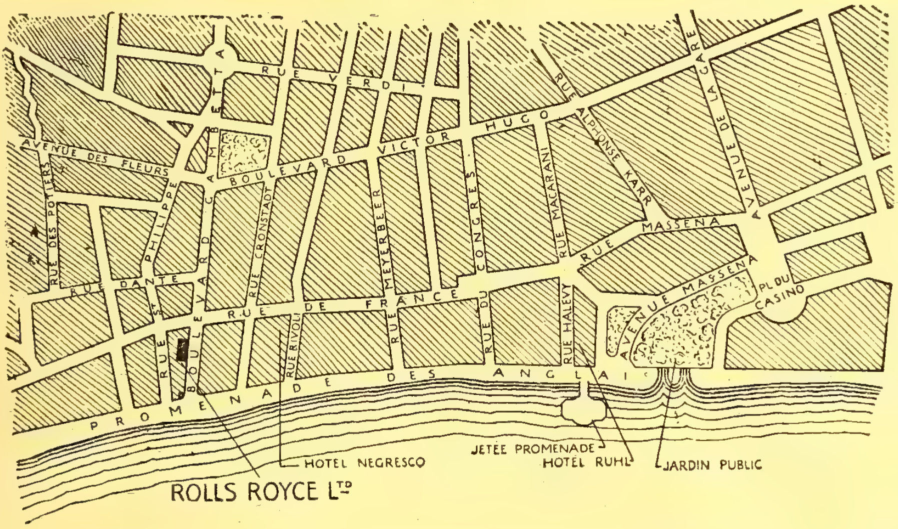
The delivery piping separates at once aft the pump into two tubes, which are led along the two exterior sides below by the cylinders, diminishing forwards in diameter. From these pipes the cooling water is distributed to each cylinder, and having passed them collects again in two tubes mounted above the cylinders which lead to the radiator.

The ignition was originally arranged for single ignition, and accordingly only two magnetos were at first provided. Later twin-ignition was taken up and a second pair of magnetos added.



The Camshaft, Camshaft Casing, and the Rocking Levers of the Rolls-Royce Engine.

ROLLS-ROYCE



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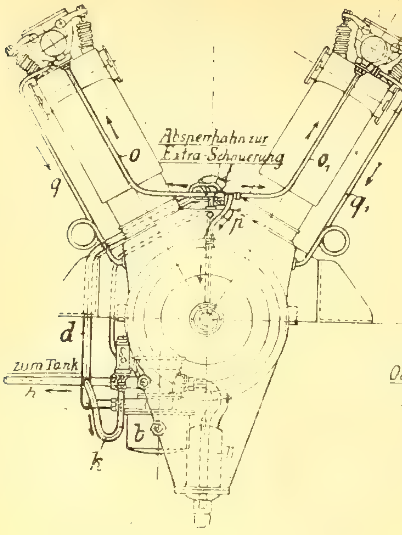
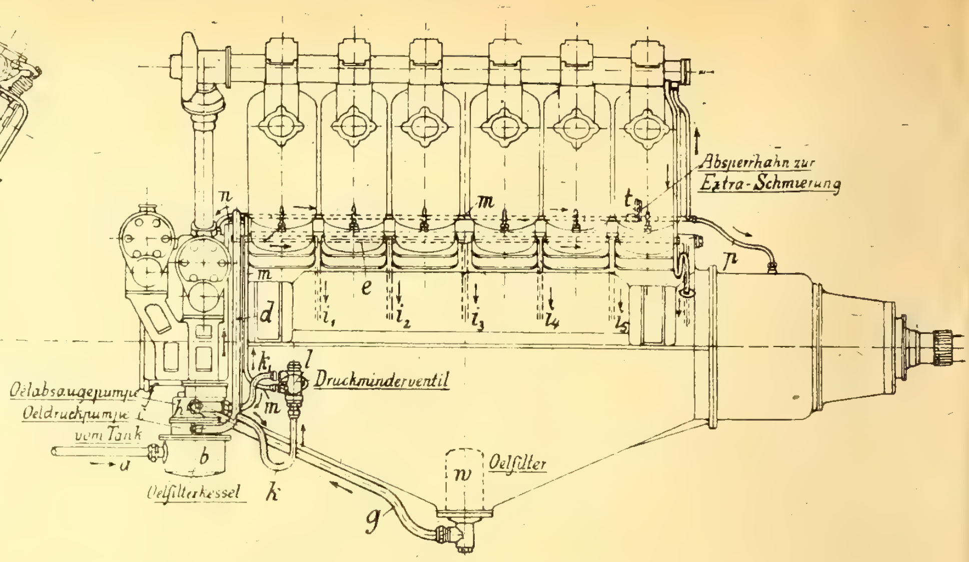




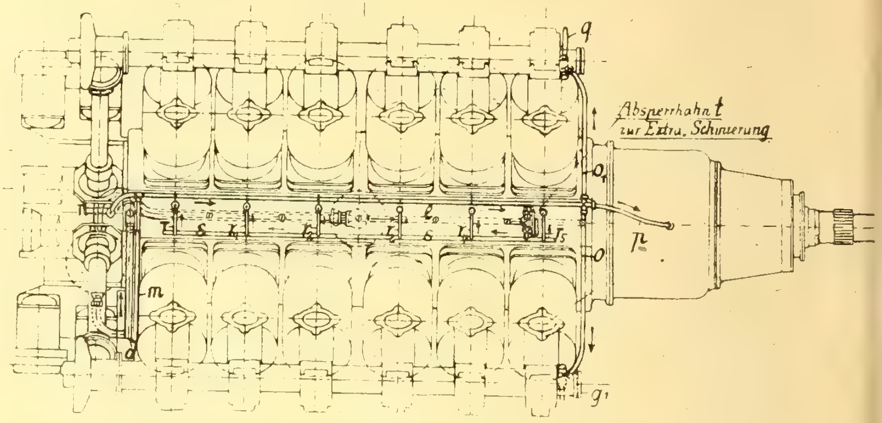


Diagram of the Lubrication System of the Rolls-Royce Engine.

Oelabsaugepumpe = Oil suction pump.

Oeldruckpumpe = Oil pressure pump.

Druckminderventil = Relief valve.

Absperrhahn zur Extra-Schmierung = Valve on extra oil supply pipe.

Oelfilterkessel = Oil filter case.

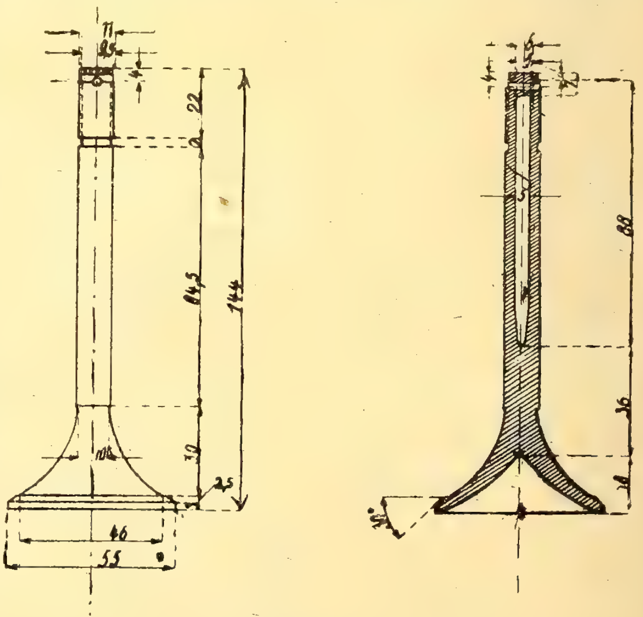
The lubrication is arranged according to the so-called "dry sump system"—i.e., the oil gathering in the deep lower part of the crankcase is continuously sucked off by the oil pump, passing through a filter, so that the case is practically oil-free. A figure of the lubrication system is shown in detail.

The force-feed oil, sent by the pump, is lead to the oil-pipe for the main bearings, cast in the top part of the crankcase, through the pipe *d*. Shortly after the oil-pump a pipe *k* is branched off this tube and leads to a pressure reduction valve *l*. Here the oil enters first through a spring-loaded valve, a chamber, from which a narrow pipe *m* branches off, carrying the oil by *n* to the worm-wheel, driving the valve gear, and further forwards through the branch pipe *p* to the gear and through *p* and o_1 to the camshafts, from where it floats back to the crankcase through the pipings *q* and q_1 and the inclined driving shafts. Further, an auxiliary pipe *s* branches off the pipe *m* near the gear above a stop-cock *t*, small tubes *r*, r_1 and r_2 starting further off from the former and ending in the crankcase. By means of this auxiliary pipe extra lubrication can be applied when needed for running in new motors, the oil being injected direct on the connecting-rod bottom and bearings. Through a second spring-loaded valve in the head of the pressure-reducer abundant oil passes through the pipe *k* and back to the tank together with the oil from the oil pump of the crankcase.

The oil-pump is made as twin gear-wheel pump. The lower gear-wheel pump is surrounded by a wire gauze filter with a large surface and mounted in a small riveted case, to which the oil floats from the gravity oil tank. Above this pump a second gear-pump is arranged, pressing the oil, gathering in the bottom part of the crankcase back to the tank. Both pumps are driven from the worm-wheel for the valve gear drive by means of a worm-wheel with vertical shaft. As the speed of the former is too high for the oil-pump drive, a small epicyclic gear is provided for transmission, from the planet wheel of which the movement for the pump shaft is taken. The two pumps are clutched mutually together with this planet gear by means of a splined hub.

With respect to the carburetter the motor has undergone various changes. The first specimens were equipped with two twin-carburetters, but the newer engines are provided with single carburetters. The type of carburetter is the Claudel-Hobson model, much employed in hostile aero engines, and so may be assumed to be well known.

In the single carburetters two different editions are to be distinguished with regard to the altitude adjustment. While the old editions showed the regulation of the pressure in the float chamber of the Gillet-Lehmann regulation nature, also employed on the twin-carburetters, petrol throttling has been used for the new carburetters, the details of which are evident from a figure. The throttle-needle causes the pressure gradient between the float chamber and the jet to vary as required. Three different positions of this throttle-needle are marked on the carburetter: "weak" for altitude adjustment, "normal" for the normal performance, which worked out on brake at 320 h.p. for a petrol consumption of 226 grams per h.p. hour, and "strong" for a rich mixture. In this position the motor exceeds the normal performance by 10 per cent.,



The Valves of the Rolls-Royce "Eagle" described on page 1789.

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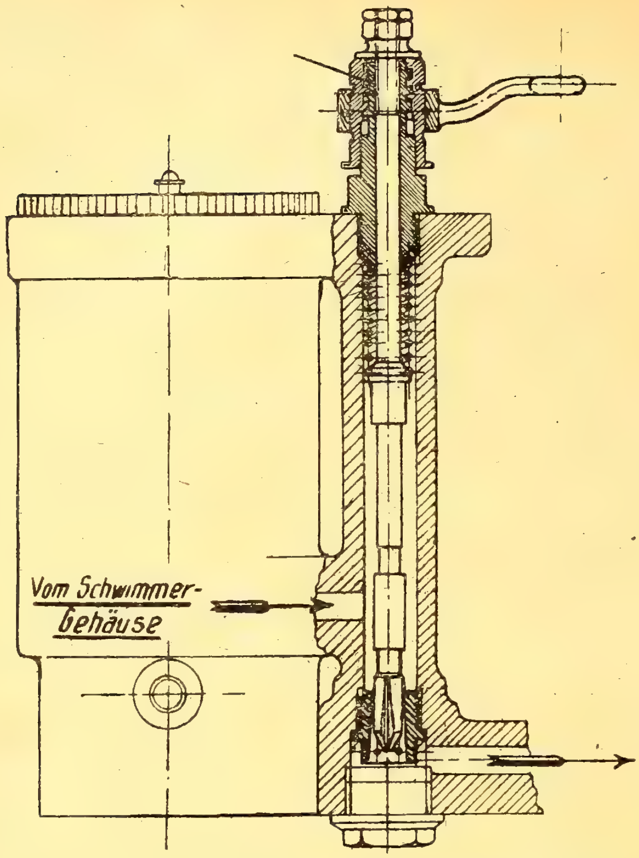
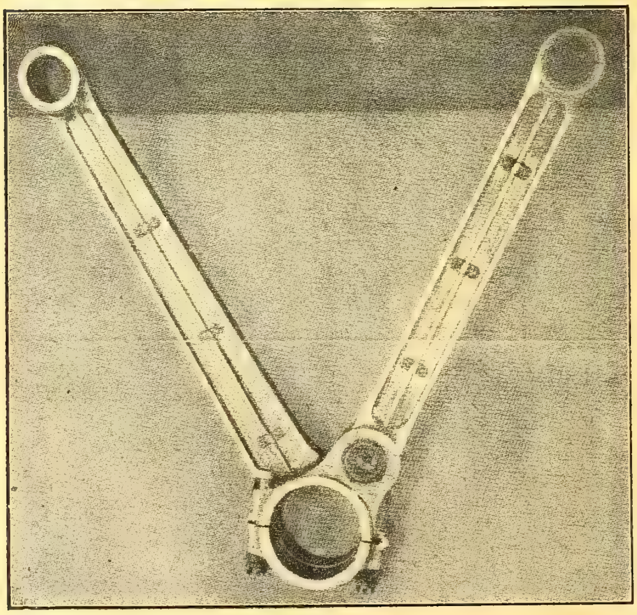


The Petrol Adjusting Needle Valve for Altitude Control. Vom Schwimmer Genause = from float chamber.

becoming 352 h.p. which is given on the signboard of the firm as full b.h.p.

The carburetter is not provided with a heating jacket, and can probably do without it, owing to the protected position between the cylinders inside the fuselage. No special preheating of the carburetter air is provided, as the air is drawn direct from the body, where sufficient warm air is available, the more when the radiator (of car type) is arranged between the airscrew and the motor. The induction pipe is, however, provided with a heating jacket, which is connected with the cooling water circulation. The value of this heating jacket is very questionable, as it possesses only a limited heating area, and, no doubt, it could be dropped without harm. To inject petrol into the induction pipe before starting, a nipple is provided on the underside, through which the petrol can be injected by means of a small hand-pump

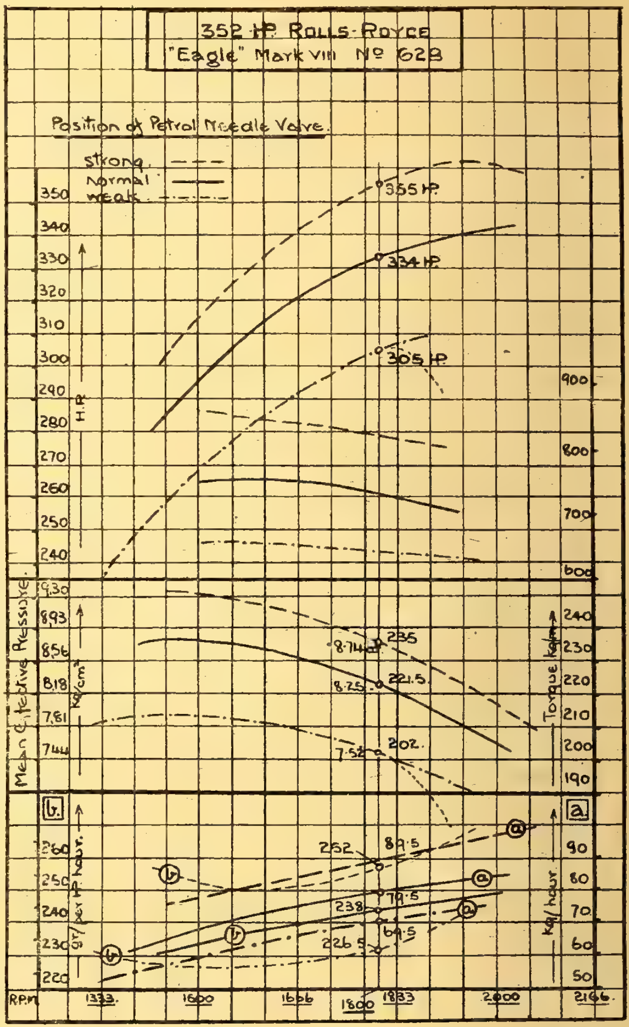


Assembled connecting rods of the Rolls-Royce "Eagle" engine.

For the petrol feed an air-pump is provided which is driven from the second magneto shaft by worm-wheels.

In earlier editions this air-pump was, as in many German engines, forward on the camshaft case, and thus always exposed to damage when the aircraft stands on its nose in landing. It is extraordinary that even the crankshaft of this air-pump is balanced by counterweights, which is owing to the high number of r.p.m. of the pump. The dimensions are very ample, so that sufficient pressure is still left, even in the deepest nose-dive, or with a large tank nearly empty. In former models sufficient attention was not paid to this need.

Yet in itself pressure-fed petrol must be regarded as an antiquated method for aircraft, as with a modern war aeroplane a non-force petrol tank is needed for fire safety. In this case the air-pump must be replaced by a fuel-pump, the construction of which is, however, rather difficult, especially with regard to packing and the suction capacity of such fuel-pumps, driven by the motor, is apt to diminish at great altitudes (above 21,000 ft.)



The Chart representing German test results on a Rolls-Royce "Eagle 8" engine.

The reduction gear for the airscrew is one of the most interesting parts of the design. It is made as epicyclic gear, and the airscrew shaft is at the same height as the crankshaft, which from the point of view of the aeroplane designer may be considered a drawback, as high landing chassis and thus high aeroplane designs are the result. It possesses, however, advantages to the motor designer. First, the form of the gear-box as a cylindrical body is very favourable for absorbing the stresses. A drawback results from employing ball bearings instead of journals in the reduction gear that with bearing adjustment of the crankshaft the ball bearings in the gear have to be adjusted also. This difficulty can be evaded either by providing the shaft with a universal joint or by allowing the gear-box to swivel in relation to the crankcase by means of a universal joint. In the Rolls-Royce the latter proposition has been chosen. Here the universal joint is found between the case and the shaft of the epicyclic gear, so that the shaft can take up a position as required

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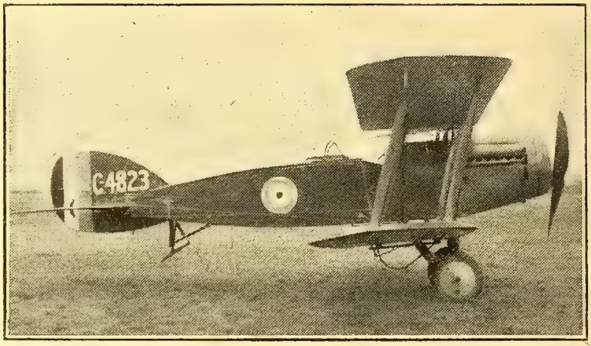

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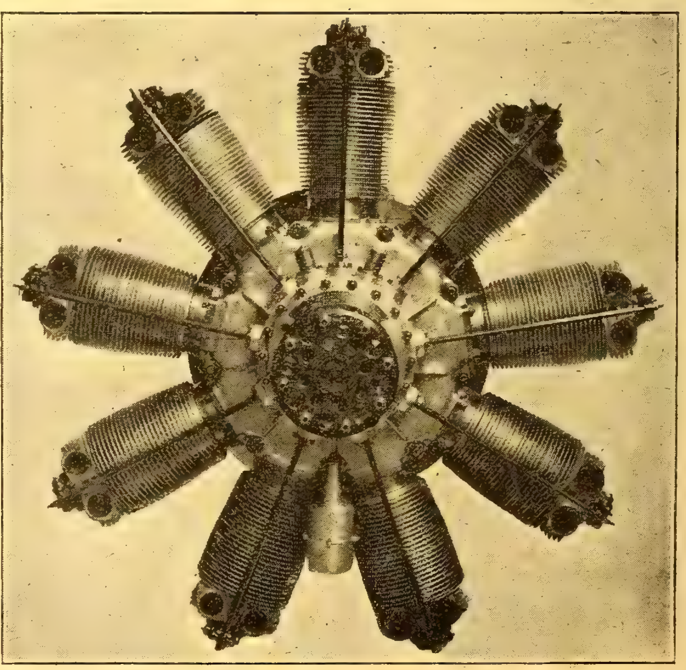

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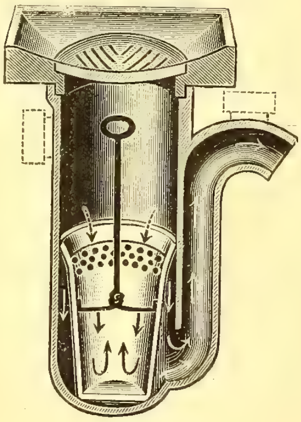

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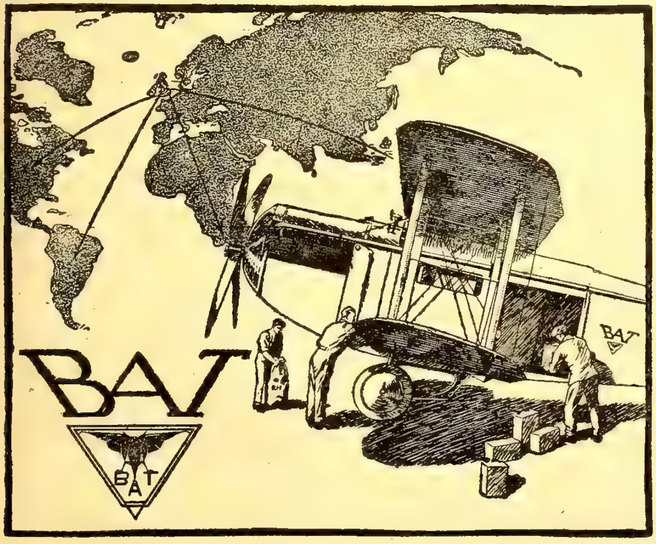

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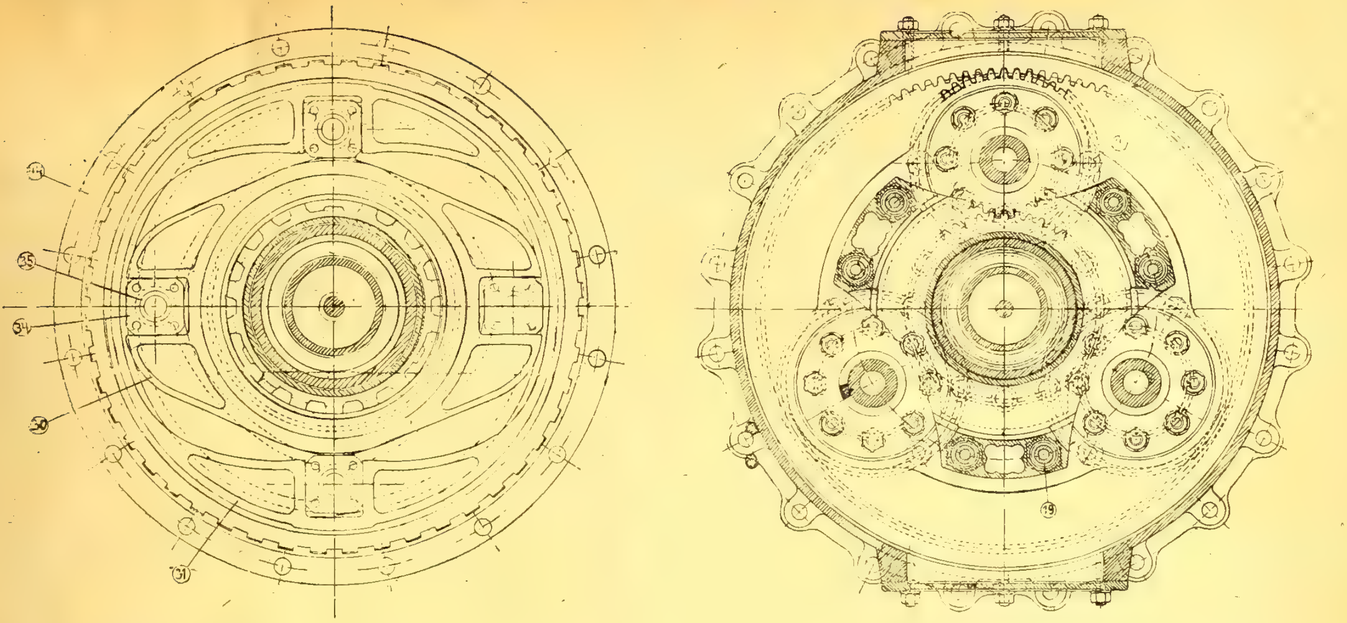
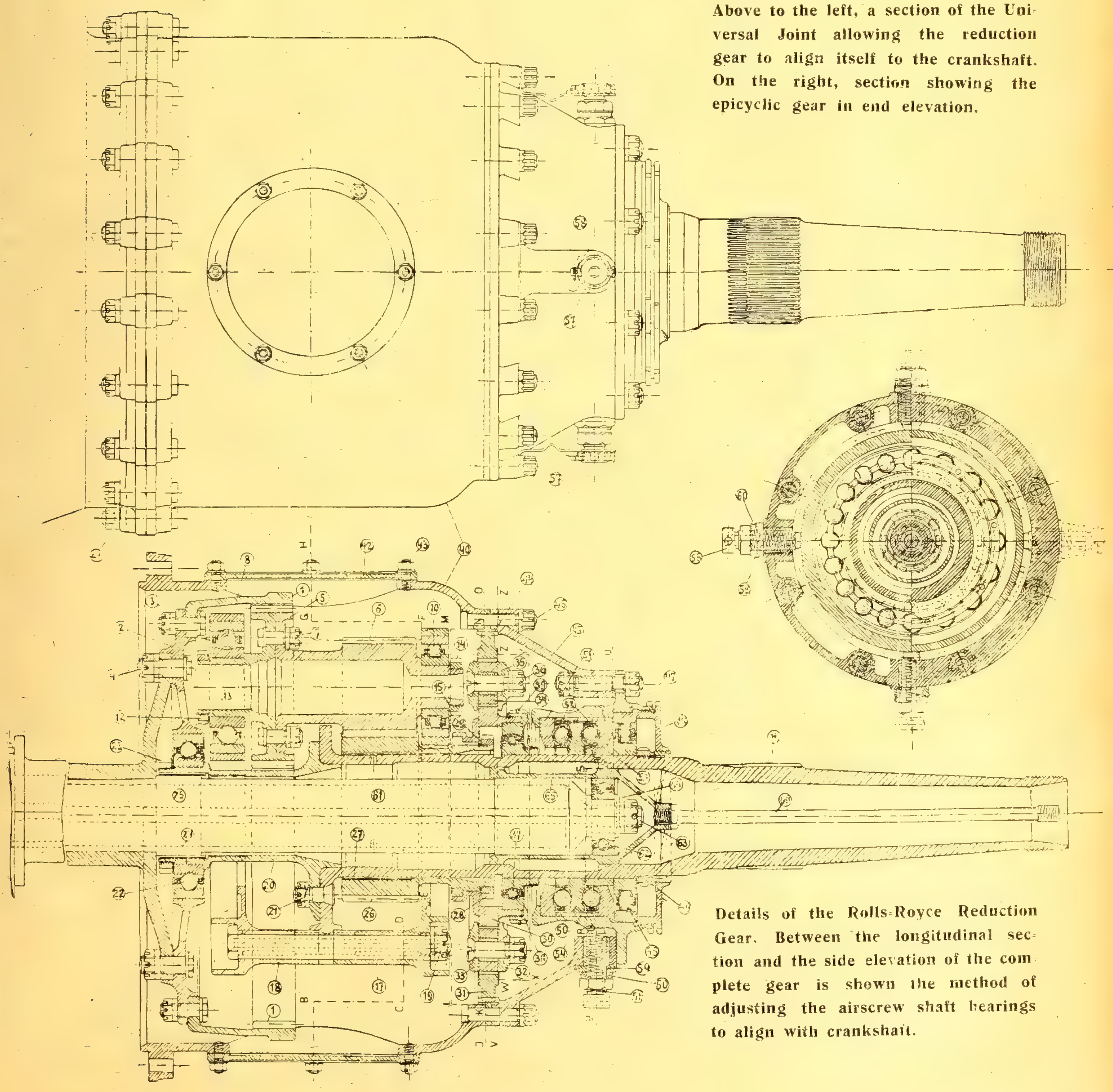


Above to the left, a section of the Universal Joint allowing the reduction gear to align itself to the crankshaft. On the right, section showing the epicyclic gear in end elevation.



Details of the Rolls-Royce Reduction Gear. Between the longitudinal section and the side elevation of the complete gear is shown the method of adjusting the airscrew shaft bearings to align with crankshaft.

inside the gear-box without interfering with the equal level bearing of the gear shaft and the crankshaft. The construction of this universal joint is shown in a figure. In relation to the gear-box only the double thrust ball bearing and front roller bearing for the airscrew shaft require adjustment. This adjustment is made by means of four strong pressure screws, provided in the gear-box. As these bearings adjust themselves by rotating of the motor, if the mounting and pressure screws are slackened, the difficulties of an exact adjustment are small.

The stresses are very low compared with the spur wheel reduction gears, otherwise used generally on aero engines, which is to be explained by the simultaneous engagement of three wheels. As regards the stress on the flank of the teeth, one which caused in so many cases the destroying of the flanks of teeth and thus lead to a failure of the reduction gear, this is decided by the radius of curve of the flank of the teeth at the contact point. The larger the radius the more favourable the stress is. For this case the internal teeth has an advantage, so that these stresses work out specially low, so far as the internal teeth are concerned, while naturally here again also the employment of three gear wheels engaging at the same time reduces this stress.

A further and no less important advantage is that small gear wheels and pitch suffice, so that favourable engagement and very exact manufacture can be attained.

Further, the epicyclic gear supplies an effective flywheel mass in the large internal teethed gear wheel. The only drawback to be found for the motor designer is the relative high weight. The impossibility of tempering and grinding the internal wheel is not a serious drawback, as non-tempered gear wheels suffice for the very low compressive stresses, which work out only at one third of the permissible figure for tempered wheels. Owing to the very small heating effect on the gear wheels the reduction gear requires no exceptional lubrication. Mainly the gear is lubricated from the crankshaft oil chamber, but a special oil pipe branching off from the camshaft lubrication takes a limited quantity of oil to the gear. The oil splashed off by the gear wheels runs back into the crankcase.

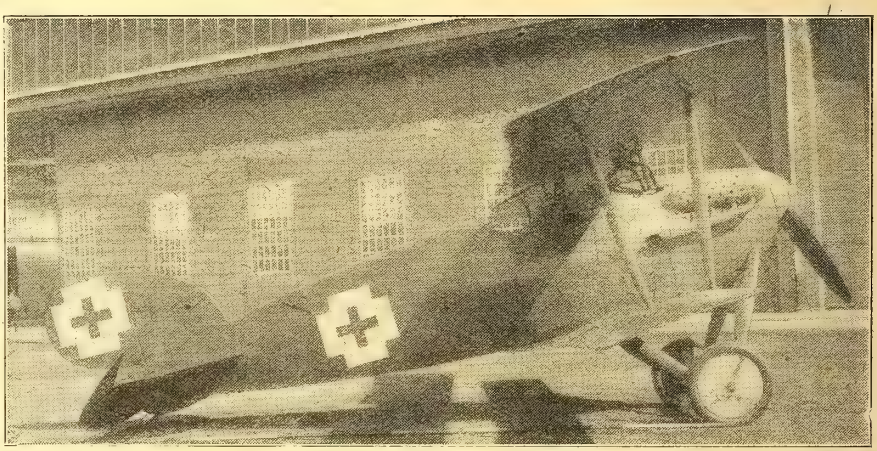
Finally, the results of tests on one of the latest captured Rolls-Royce motors are given. The motor ran faultlessly at all carburetter adjustments and showed no back-fire explosions even with weak mixtures. The regulation capacity is altogether good, as evident from the curves given, in which the mean pressure, the performance, and the r.p.m. are recorded in their relation to the petrol adjustment position.

RECENT GERMAN WAR MACHINES.

II.—Mercedes Daimler.

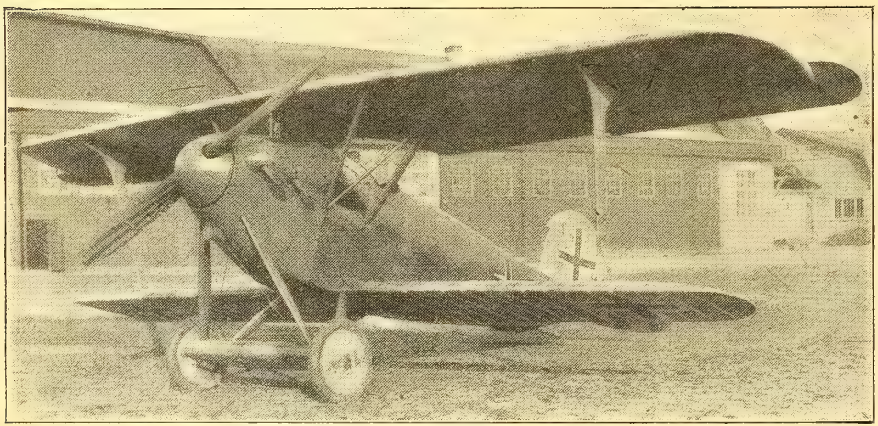
The Mercédès Daimler Motor Gesellschaft have achieved aeronautical fame as the builders of the Mercédès aero engine, but it is not so generally known that they also manufactured aeroplanes.

It is not known certainly that any of the aircraft produced at their aeroplane factory at Singelfinden ever reached any of the fighting fronts, but they undoubtedly produced the machines illustrated. All the three machines shown are of extreme interest in that the photographs show that they are equipped with a Vee-type engine, which evidence of German origin shows to be an 8-cylinder product of the Daimler factory, nominally of 185 h.p.


The Mercédès Daimler "L.6."

The first of these machines—the L.6—is a single-seater fighter with a streamlined body of oval section, fitted with upper wings of slightly greater span and chord than are the lower ones, fitted with a single row of interplane struts on either side the fuselage, and with the usual cable interplane wiring.

The second machine illustrated—the L.9 type—is also a single-seat fighter, but appears to be devoid of interplane wiring, and has but one single I-form strut on each side.


The Mercédès Daimler "L.9."

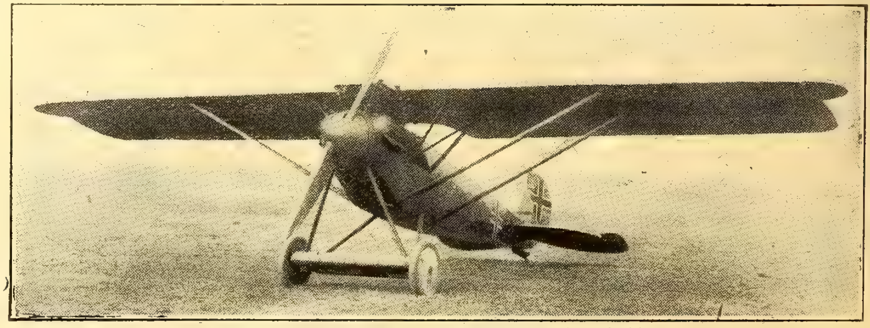
The third—the L.11—is a rigid truss monoplane of the parasol type, somewhat reminiscent of the Leonig monoplane.

The fairing of the axle, which is in the form of a heavily cambered wing section, should be noted. This feature is characteristic of certain type of German aircraft, and made an appearance in the early editions of the Fokker triplane.

In addition, the same works have turned out a type known as the L.8—a two-seater machine somewhat similar to the L.6, but fitted with upper and lower wings of equal chord and with a heavy stagger.

All the machines of this make are fitted with balanced ailerons, rudders, and elevators, and their general appearance suggests that they are of late 1918 manufacture.

Although the engine in all these machines is of the same general type, it would appear to have undergone sundry modifications, as each of the three machines illustrated has a slightly different arrangement of exhaust pipe, which seem to involve changes in the position of the exhaust ports on the engine.


A Mercédès Daimler Monoplane, the L.11.

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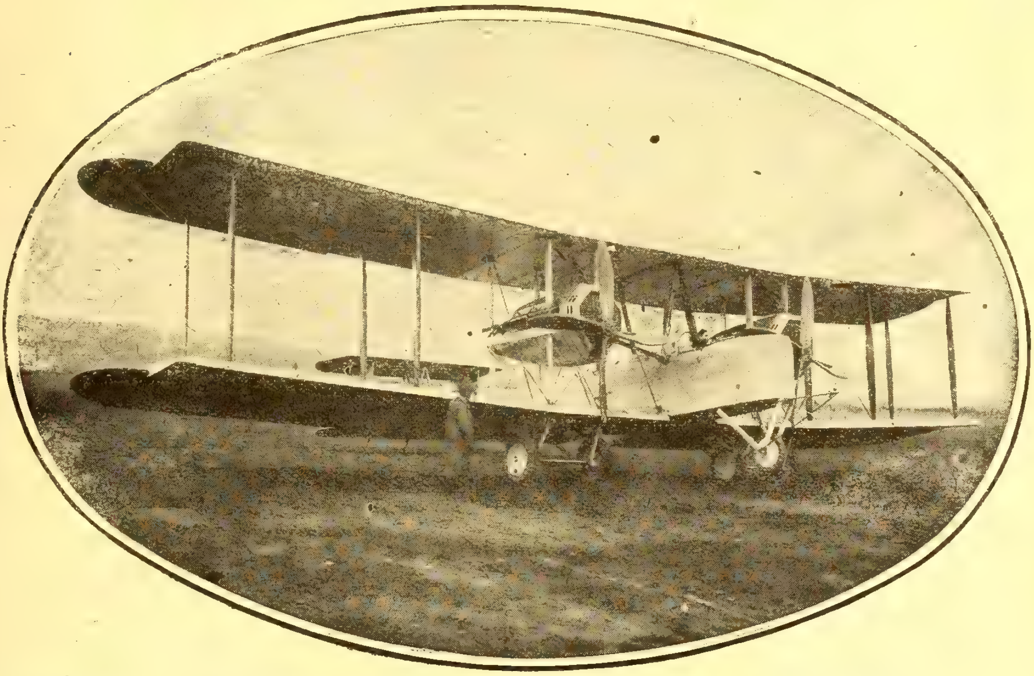

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THE WEATHER AND COMMERCIAL AVIATION.

By R. BERNARD, F.R.MET.SOC.
Meteorologist to Aircraft Transport and Travel, Ltd.

One of the most noticeable features of the articles and speeches made by the authorities on Aerial Travel is the persistent reference to meteorology. No one who has studied problems of reliability of an aerial service can doubt that the question of weather is one of the most important factors, but although mention of it is invariably made, little has been written as to the actual methods of obtaining and using such information as is available.

It was only during the last year of the war, one might almost say months, that the value of elaborate weather information for aerial work was recognised; the weather expert was looked upon as a crank, and his failure to forecast on Monday what the "weather for the next week-end" was to be caused many sarcastic remarks, and very little faith was placed in his forecasts. The directors of flying operations, if they consulted the meteorologist at all, wanted to know what the actual weather was like, and not what the meteorologist thought it would be, and as a natural result a system of direct reports by telephone grew up which no doubt proved invaluable, but at the same time caused the purely scientific aspect of meteorology to fall rather into the background.

There is, perhaps, some justification for the sceptics who have seen long-shot forecasts, such as those issued to the newspapers, go wrong; but when one considers that they are virtually forecasts for 36 hours ahead in a country that is noted for its changeable weather, it is extremely creditable to the forecaster that the percentage of failures is not larger. It is, however, no criterion that because of these failures it is impossible to place reliance on scientific meteorology for commercial purposes. When the actual requirements of an aerial service are considered it will be seen that on the system of short-stage working as advocated by Mr. Holt Thomas a forecast for six hours ahead will cover nearly all requirements, and such a forecast can be given with a high percentage of accuracy.

Information is available in the shape of simultaneous observations by skilled observers throughout N.W. Europe four times daily, and we can thus roughly split the 24 hours into four periods, which mean that four six-hour forecasts will cover the whole day, and the flight organiser will always have a reasonably accurate knowledge of what the weather during the whole of any of these short-stage flights is going to be.

It is on such a system that the Meteorological Department of Messrs. Aircraft Transport and Travel, Ltd., is being organised; arrangements have been or are being made to receive from the Air Ministry Meteorological Department and the Meteorological Office all the observations above, and although the department has only been in active existence for about two months it is already receiving and using information which has not hitherto been supplied to any commercial firm.

From this information maps are at once drawn, showing the weather over the whole of North-Western Europe. on similar lines to those compiled by the Air Ministry and Meteorological Office, and it is on the information revealed by such mapping of the various weather characteristics that forecasts are based.

In addition to these details, reports of pilot balloon ascents at various stations in the British Isles and France are received. These balloons give the direction and velocity of the upper winds, and this is also plotted on maps, giving at a glance the direction and velocity of the currents in the upper air.

The direct reports which are obtained by the Air Ministry hourly complete the chain of information, and the department, with the whole of the foregoing information at its command, is in a position to give reliable reports to the company's aerodrome managers and pilots for practically any aerial route in North-Western Europe.

I have so far confined myself to details of information received by the company's meteorological department, but what is perhaps of more interest is the information that the department can place at the company's disposal. It will be advisable to consider briefly what weather information an aerodrome manager or pilot requires.

This falls naturally under two headings: information as to weather conditions well in advance to enable arrangements for the flight to be made, and to prevent unnecessary work if conditions are to be too bad for flying; and information given to the pilot of conditions over his actual route at the time of the start of the flight, together with particulars of any expected changes during the flight.

With regard to the first, forecasts are issued twice a day (later these will be issued four times daily), giving general conditions as to wind, cloud height and amount, visibility, etc., and the probable changes in these features during the ensuing periods. At present one is issued at about 10 a.m. covering the period up to 5 p.m., and at between 4.30 and 5 p.m. another is circulated giving the prospects for the ensuing evening, night, and following morning. These forecasts must naturally be divided into districts, and at the present time are confined to South-East England, Channel, and Northern France; but the department is in a position to give forecasts for any district in North-Western Europe if required.

With the morning forecast a map is issued giving at a glance the actual cloud amount, height of clouds, visibility, surface winds and upper winds at about half a dozen stations between London and Paris, and with the afternoon forecast a similar map showing conditions at about 15 places distributed over the district south of a line drawn from Spurn Head to Liverpool and extending to Paris.

The particulars given to a pilot at the start of his journey are based on the information contained in the direct reports received from the Air Ministry, and include particulars as to the *actual* weather conditions at points over his route during the preceding hour, and in some cases as recent as the preceding half-hour.

In addition to this he is informed of any variations likely to be encountered, together with a forecast of probable changes during the time of his journey. Wherever possible he is also supplied with particulars of the strength and direction of the wind at different heights to enable him to take advantage of any favourable wind-current.

One of the principal uses to which the department is being put is the compilation of statistics of climatic conditions over the company's prospective routes. It is an example of the thorough way in which the organisation of the company is being built up that no route which is contemplated gets past the embryonic stage without the consideration of the effect that weather conditions will have on the percentage reliability of service which can be maintained on such route, and the statistical information which has been and is being collected is proving invaluable.

THE BRITISH INDUSTRIES FAIR (BIRMINGHAM), 1920.

The committee of management of the Birmingham Section of the British Industries Fair have succeeded in overcoming their initial difficulty, and have now secured buildings which will provide them with 150,000 sq. ft. of space for the housing of their exhibits. The rapid booking of space has had an effect which will in the ultimate result be of widespread benefit—it has, in short, compelled the committee to make a drastic alteration in their original arrangements, and they are to be heartily congratulated on successfully negotiating for and obtaining the loan of the extremely suitable buildings which were erected during the war at the Castle Bromwich Aerodrome.

The Air Ministry has consented to the buildings being used for the purpose, and this means that there need be no further irritating limitation of space—that exhibitors showing their products in two or more groups will be able to have the same under their eye, as it were, without traveling to other locations—and finally that the buyers who have more than one interest will not be called upon to move from one district to another. The site has many natural advantages: firstly, the buildings could not be better suited for the purpose; secondly, the station (Castle Bromwich) is practically in the grounds on which the buildings stand; and thirdly, there are railway sidings for the occupants' special use.

It is understood the subsidiary arrangements are as under: the Town Hall will be used as a reception bureau for all buyers visiting the fair, and here they will be able to obtain all the needed information as to hotel accommodation, transport services, places of interest, and the many other points on which strangers to the city will require assistance and advice.

A special service of trains will be run on the Midland Railway from New St. Station, and at regular and frequent intervals during the whole period of the fair motor-'buses will leave the Town Hall for the Aerodrome, and the Aerodrome for the centre of the city.

One effect of the new situation of the fair is that, while at present some 500 firms have taken space, within a very short time all those firms who have been hesitating will undoubtedly apply, hence every firm who is desirous of widening its trade connections should make immediate application for space.

Letters should be addressed: General Manager, British Industries Fair (Birmingham), Chamber of Commerce, Birmingham.

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The demand of the aeroplane for the utmost power from the lightest and most trustworthy engine, and our concentration on that problem, has taught us much—and each owner of the new Austin "Twenty" will benefit thereby.

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The new Austin "Twenty"

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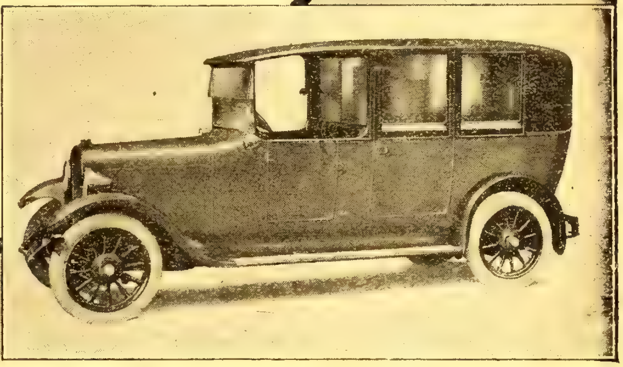

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Telegrams: "Aviation, Bristol." Codes: A.1. A B.C. & Moreing. Telephone: 3906 Bristol.

MODEL EXPERIMENTS AND FULL-SCALE RESULTS.

With the approval of the Technical Department and under the auspices of the Société Française de Navigation Aerienne, M. Toussaint gave a very interesting lecture on the aerodynamic progress made by the Germans during the war.

M. Toussaint, who is recognised by everyone who has had anything to discuss with him as the foremost technical authority on aircraft construction in France, is the director of the Aerotechnical Laboratory at St. Cyr and also in charge of the Testing Squadron of the French Technical Department (corresponding to our Martlesham Heath).

As is well known, the German professors at the Aerodynamic Laboratory at Gottingen carried on their pre-war programme of experimental study without any reference to the war, and indeed complained officially in 1918 that the official "experts" were making no use of the epoch-making discoveries they had made.

It is in order that French aircraft constructors should have the advantage of these discoveries before their authors are able to make use of them that the Technical Department have arranged for this lecture and the publication of the diagrams and formulæ.

Very briefly, these eminent professors have determined very simple formulæ by which, given the graph and characteristics of model tests of a given wing, one can calculate to within an error of 2 to 3 per cent. the exact head-resistance of a given cellule, and separate out the resistance due to the form of each wing, the resistance due to work done (lift and drag separately if desired), and the increased resistance on each wing due to mutual interference, with exact corrections for swept-back or variable curve wings, etc.

In short, one can calculate from the model the "sigma" of the resistance curves of the graph for a given full-size machine.

M. Toussaint has proved these figures against the known model and full-scale figures for the major part of Allied aircraft, and the error in every case is less than 3 per cent.

When it is remembered that the British "experts" still contend that it is impossible to calculate full-scale figures from models, the value of these German formulæ will be immediately apparent, and it shows remarkable foresight on the part of the French authorities in having circulated this information amongst French constructors so quickly. In one week it brings French practice ahead of the British, and will prove an impoitant factor in next year's competitive designs.—John Strong.

A DOUBLE LIBERTY.

The United States Air Service authorities have constructed a 24-cylinder Liberty engine by the process of joining two upper crankcase halves, each with its 12 cylinders, one inverted and the other the right way up, and making certain alterations to the connecting-rods.

It is said that the engine thus constructed gave 673 h.p., weighed 1.97 lb. per h.p. dry, and used 0.55 lb. per h.p.-hour.

As the 12-cylinder engine is said to give 400 h.p., it appears that the 24-cylinder set was run at a lower speed, or that the compression was reduced.

THE WIRELESS SOCIETY OF LONDON.

The Wireless Society of London held their first general meeting since the war at the Institution of Civil Engineers, Westminster, on Tuesday, Oct. 28th. The meeting was attended by over 150 members.

The President, Mr. A. A. Campbell Swinton, F.R.S., was in the chair, and opened the meeting by referring to the state of suspended animation the Society had been in during the war, and that with the close of the war the Committee and Officers had met and decided to bring the Society into activity once more. Owing to the resignation of Mr. R. H. Klein from the office of Hon. Secretary, Mr. Leslie McMichael had been asked, and had agreed, to take over the duties entailed. Mr. Klein had been elected an Acting Vice-President. Admiral Sir Henry Jackson, G.C.B., F.R.S., one of the very earliest experimenters in wireless telegraphy had also been included, and was taking keen interest in the welfare of the Society. Dr. F. C. Knight had been made a Member of the Committee. The meeting was invited to confirm these appointments, and, by an amendment, it was decided that the present Officers and Committee should remain during the year 1920.

The President spoke of the loss sustained to the Society by the death of Sir William Crookes, O.M., Mr. Russell Clark, O.B.E., Prof. Silvanus Thompson, and Mr. Duddell, and a number of members had unfortunately lost their lives in the war.

The matter of licences for wireless telegraphy was touched upon at some length, and it was pointed out that every effort has been and will be made to influence the Post Office authorities to come to some decision, so that experimental work among amateurs may again be established.

Mr. Hope Jones, M.I.E.E., the Chairman, spoke of the application of other wireless societies and clubs with a view to unity of action, and said that the Committee were alive to the possibilities, and further developments may be expected—in the meantime, all secretaries of wireless societies and clubs are invited to communicate their views to the Hon. Secretary.

After the business of the meeting closed, the attention of members was directed to an exceptionally interesting show of wireless exhibits which had been brought, and brief descriptions were given. Dr. Erskine Murray explained details of the Air Force telegraphy and telepathy sets exhibited, including a Robinson Direction Finder. Mr. Scott Taggart had a fine array of valves, made by the Ediswan Company, showing their manufacture in detail. The Marconi Company and Messrs. Read and Co., and the Zenith Manufacturing Co. had lent some of their most up-to-date apparatus. Mr. Maurice Child, Mr. Burbury, Mr. Clinker, Mr. Leslie Miller, and Capt. Donisthorpe had brought pieces of interest, and the President had on exhibition a compact and sensitive valve amplifier, which, together with a specially constructed loop aerial, was capable of making signals from European stations audible at a considerable distance from the telephones.

[The reference to the R.A.F. use of telepathy is somewhat startling, but it is presumed to be a typist's error, and that telephony is meant.—Ed.]

A NEW FRENCH ROTARY ENGINE.

A French engine, of which little has yet been heard in this country, is the "Sega," built by M. Seghers, of 11, Rue Scribe, Paris. This engine, in its first edition produced in 1917, gave 250 h.p. for a weight of 0.85 kg. (1.87 lb.) per h.p.

A new model, giving 500 h.p. for a weight of 0.65 kg. (1.43 lb.) per h.p. is, it is said, to be exhibited at the forthcoming Paris Aero Show. This engine is a 9-cylinder affair, with extremely novel valve gear, which it is not yet permissible to describe.

A NEW REVIEW.

A new technical publication, entitled "La Vie Technique et Industrielle," has recently made its appearance in France. This review, which is excellently produced, is practically an index of the important articles in technical and industrial subjects which have appeared in the newspapers of the world during the previous month. Those who are interested in industrial production in its higher phases, will do well to write to the Director of "La Vie Technique et Industrielle," at 18, Rue Seguier, Paris, 6, and ask for a specimen copy.

THE ROYAL VISIT TO OLYMPIA.

Readers will probably be interested to learn that whilst at the Motor Show at Olympia this morning (Friday, Nov. 14th), Her Majesty the Queen, accompanied by Her Royal Highness the Princess Mary, honoured Messrs. Mann, Egerton and Co. by a special visit to their Stand. Her Majesty was graciously pleased to inspect the bodies exhibited, which were made at the Norwich works of the company, and showed special interest in a saloon body on an Armstrong-Siddeley chassis, and a Coupé body on an Austin chassis. All will appreciate this signal honour shown to a Norfolk firm.

20TH CENTURY MASCOTS.

At the present moment it seems quite the thing to ornament the radiator filler cap of one's car with some form of frightfulness ranging from a golliwog of the Domestic Bazaar Co. type, to a streamline nymph "en deshabille" carried out in silver. There must be many people in the R.A.F. who were wont, during the late war, to fly with a horrible monstrosity, characterising the British toy, squatting astride the Pitot tube or Aldis sight.

Now that flying is, at any rate, for most people, a luxury only to be indulged in during a war, it is possible, by the introduction of the 20th-Century Mascot to reverse the order of things and carry a scale model aeroplane on the radiator cap of that expensive British toy—the motor-car.

Rogers Bros., of the "Tabloid" Aero and Engineering Works, Farnham Royal, Slough, are producing a series of scale model aeroplanes, ranging from a twin-engined Handley Page to a Bristol monoplane or a Sopwith "Pup," made in brass, heavily silver-plated. They are riveted and hard-soldered together, and are, therefore, quite able to stand all shocks and vibration likely to be met with in a car.

They can also be mounted on suitable stands as paper weights, ash trays, ornaments, etc. The models range in size from 5½ in. to 12 in., and are absolutely to scale. A complete range of all types of standard service aircraft are ready, and if drawings are available any type of machine can be made to order.

L. C. Rawlence and Co., Ltd., of 40, Sackville Street, W., who are the sole London agents for these models, showed some specimens on their stand at the Olympia Motor Show, and some models are also on view in the windows of the Lepaerial Transport Bureau in Piccadilly Circus, W.

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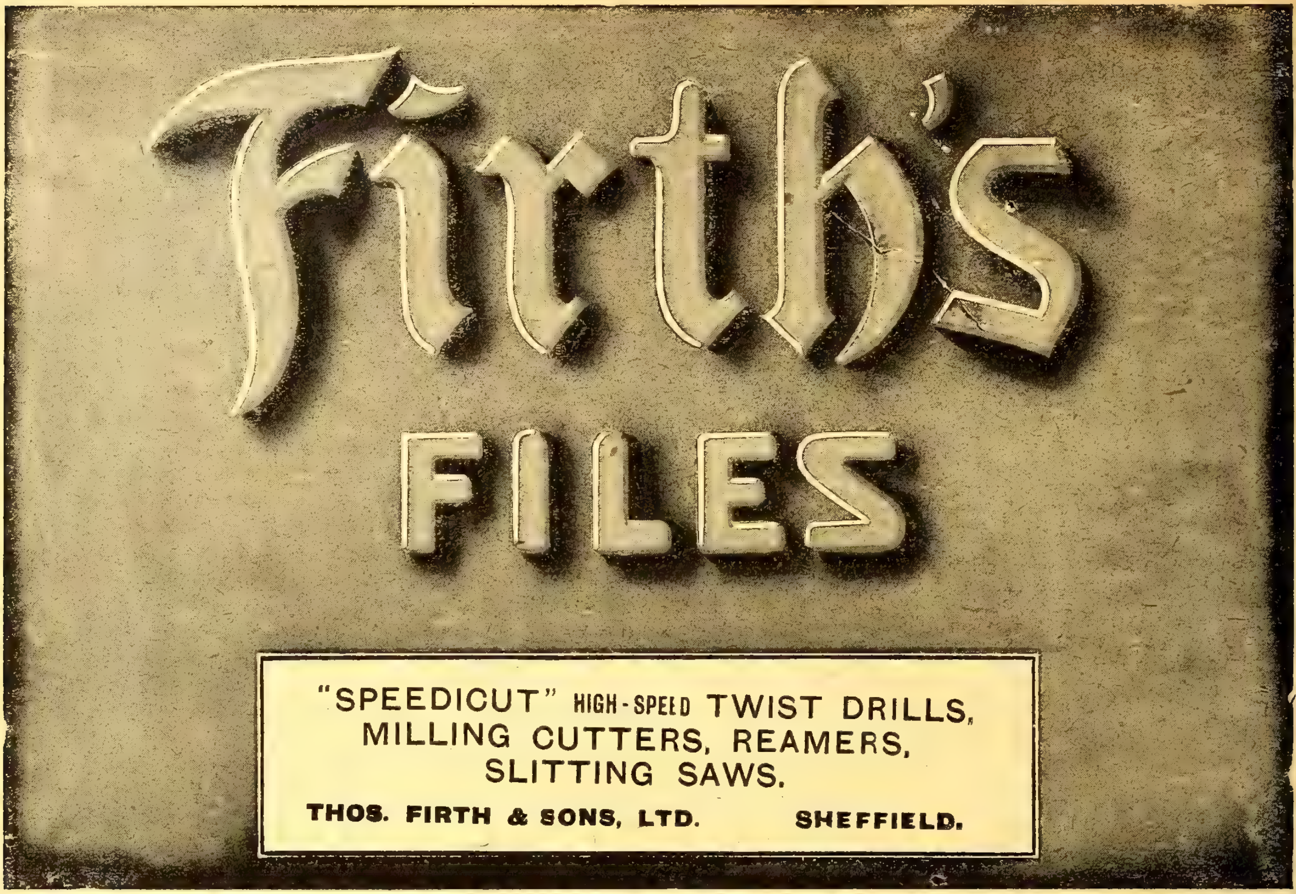

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ENGINEERS, LONDON.

"GWYNNE, LONDON." "HAMMERSMITH 1910."

(*Continued from page 1786.*)

Awaiting a Handley Page.

The H.P. hangar has been erected here for the past two weeks, awaiting the machine which so far has failed to arrive.

An "Ack Wagon."

Col. G. L. P. Henderson, M.C., is due here this week or next with a large "Ack Wagon" for the P.O. Flygkompani. It is fitted to carry two passengers, and the company believes that it will do a lot of work.

The Fate of the Rivals.

The Svenska Lufttraffik, the only rivals of the P.O. Flygkompani, started work the other day, with a German pilot and a seaplane, they also cut the Flygkompani's price by 50 crowns and threatened to go even lower, but they had to pack up on the second day, owing to all the waterways and the seaplane harbour being frozen over.—K. F. S.

SWITZERLAND.

The Danish correspondent of The Aeroplane writes :—

Ad Astra.

The German quarterly aero review, "Illustrated Flying World," reports that in the first days of November a Swiss Air Navigation Co., Ltd. (Aviation Suisse S.A.) was formed in Zürich under the name of "Ad Astra," with the aim of making air stations at the chief Swiss traffic centres. The company will be served by army pilots and mechanics, trained by the Government, and will keep also a stock of aircraft ready for flight and at the disposal of the Government.

Much consideration was given to the choice of type of machine. Seaplanes were finally decided upon for air traffic, as most resorts are situated by the lakes. Italian 180-200-h.p. engined Savoia two-passenger aircraft and some land-going machines are to be considered.

A continual aerial service, Geneve-Luzern-Zürich-Friedrichshafen, is already being prepared, joining the service to Berlin.

The "Ad Astra" is purely a Swiss enterprise, with Swiss money and personnel. The technical manager is Lieut. Wild, who is stated, before and during the war, to have been in the service of an Italan aeroplane company. (One remembers a Lieut. Wild, who was the designer of a monoplane with his own propeller, produced by Gustav Otto in Munich. This machine, piloted by Baierlein and with the designer as passenger, won the first German Aerial Derby round Berlin. It was looked upon by all competitors as a freak, but beat them all by some 10 min. in the pure speed contest.)

So that the service might be started this autumn with a relatively small capital the formation of the Zürich and Luzerne stations only has been decided for the present. At Zürich a shed has been erected near Zürichhorn on ground placed at the disposal of the company by the city.

The company is expecting the arrival of a large German flying-boat which the Swiss Flight Lieut. Frick has gone to fetch from Friedrichshafen. It is stated to be a quite new type (likely a variant of the model from the Lindau works of the Zeppelin concern in Bavaria), with a gliding gondola, 15 m. in length, and with a beam of 2.6 m., above which two unsupported Maybach motors of 270 h.p. each are mounted. The pilot's cockpit is in front of the propellers, and the passenger-cabin with seating accommodation for six persons is below. The flying-boat weighs 3 tons when empty and more than 4 tons when loaded with crew and fuel. It is made exclusively of an aluminium alloy with the exception of the planes, and should thus be fireproof. It is to stay one or two months in Switzerland to carry out tests.—Hi.

The Italian correspondent of The Aeroplane writes :—

A New Company.

Great activity is reported by all correspondents and also officially at Dubendorf. Recently twenty Zeppelin-built C.2 machines with 200-h.p. engines were delivered there for a company now being formed. Evidently the Huns can deliver the goods.

The Demand for Italian Waterplanes.

The Avions-Tourisme Company of Geneva and the Ad Astra firm at Zurich are taking delivery of various Italian-built and designed waterplanes. One is glad to learn that Macchis and S.I.A.I. machines have been going into the territory of the Confederation fairly frequently.—T. S. H.

UNITED STATES OF AMERICA.

The Transcontinental Air Route.

The Army Aeroplane Race, New York-San Francisco, made the air route between the Atlantic and Pacific Oceans a reality, suitable for practically every type of machine, and marked by sufficient landing grounds, with short distances separating each. The greatest distance being 180 miles between Buffalo and Cleveland.

The route chosen over the Rocky Mountains is the one which entails the least amount of high flying, although machines have to rise to perhaps nine or ten thousand feet to safely clear the mountains. Rivers, valleys and mountains, etc., have been utilised to the greatest extent possible in fixing a route that can be followed easily from the air.

The landing grounds, with distances from the East, are as follows :—

Mineola (Long Island), Binghampton, 142; Rochester, 267; Buffalo, 323; Cleveland, 503; Byran (Ohio), 650; Chicago (Ill.), 810; Rock Island (Ill.), 965; Des Moines, 1,123; Omaha, 1,241, St. Paul (Neb.), 1,373; North Platte (Neb.), 1,491; Sidney, 1,603; Cheyenne, 1,696; Rawlins (Wyo.), 1,809; Green River (Wyo.), 1,946; Salt Lake City, 2,083; Salduro, 2,183; Battle Mountain (Nev.), 2,345; Reno (Nev.), 2,514: Sacramento, 2,626; San Francisco, 2,701.

There is a curve to the North between New York and Buffalo which might be straightened out to the route flown over by the mail-aeroplanes from New York-Chicago. This route is due west out of New York to Bellefonte (Pa.). The highest landing ground on the transcontinental route is Rawlins (Wyo.), which is 6,623 ft. above sea-level.

Some of the above-mentioned landing grounds have just been laid out, some are Army Stations, and others are only open spaces. But all have been mapped and charted, and provide a start on which much development may be based.

THE ROYAL AERO CLUB NOTICES.

FLYING SERVICES FUND COMMITTEE.

A meeting of the Flying Services Fund Committee was held on Thursday last, November 20th, 1919, when there were present Group Captain C. R. Samson, C.M.G., D.S.O., R.A.F., in the chair; Squadron Leader T. O'B. Hubbard, M.C., R.A.F.; and the Secretary.

Applications for Assistance.—Forty-three applications for assistance were considered, and grants and allowances were voted amounting to £478 10s.

FRENCH RECORDS.

The Royal Aero Club has received from the Aero Club de France the following French records established during 1919 :—

ALTITUDE.

Aviator alone : Jean Casale, Issy-les-Moulineaux, June 14th, 1919, 9,520 metres.

Aviator and one passenger : Jacques Weiss, Villacoublay, August 13th, 1919, 9,000 metres.

Aviator and four passengers : Bossoutrot, Toussus, April 1st, 1919, 6,290 metres.

Aviator and thirteen passengers : Bossoutrot, Toussus, April 3rd, 1919, 5,990 metres.

Aviator and twenty-four passengers : Bossoutrot, Toussus, May 5th, 1919, 4,860 metres.

THE RAYMOND ORTEIG $25,000 PRIZE.

PARIS—NEW YORK; NEW YORK—PARIS.

CROSS-ATLANTIC FLIGHT.

(Under the Competition Rules of the Aero Club of America.)

A prize of $25,000 has been offered by Mr. Raymond Orteig, of New York, to be awarded to the aviator who shall cross the Atlantic in a land or water aircraft (heavier than air) from Paris or the shores of France to New York or from New York to Paris or the shores of France, without stop, within five years from May 28th, 1919. (The flight may be made either way across the Atlantic.)

Qualification of Competitors.—The competition is open to persons of any allied nationality holding an aviator's certificate issued by the International Aeronautical Federation and duly entered on the Competitors' Register of the Aero Club of America.

Entries.—The entry form, which must be accompanied by the entrance fee of $250, must be sent to the Secretary of the Aero Club of America, 297, Madison Avenue, New York City, at least fourteen days before the entrant makes his first attempt.

No part of the entrance fees is to be received by Mr. Raymond Orteig, the donor. All amounts received will be applied towards payment of the expenses of the Aero Club of America in conducting the competition. Any balance not so expended will be refunded to the competitors.

Starting Place.—Competitors must advise the Aero Club of America of the starting place selected, and should indicate as nearly as possible the proposed landing place.

The start or landing may be made from land or water. If a land plane is used, the point of starting or landing must be within 50 miles of Paris or New York. If a seaplane or flying boat be used, the start or landing must be made from a point within 50 miles of New York, and the start or landing may be from or on any point on the coast of France. The time will be taken from the moment of leaving the selected starting place, in the case of land machines. In the case of starts made from the water, the time of start and finish will be taken from the moment of leaving or reaching land or crossing the coast line. In each case the pilot must report in person immediately to the Aero Club of America or the Aero Club of France.

All starts must be made under the supervision of an official or officials appointed by the Aero Club of America.

Identification of Aircraft.—Only one aircraft may be used for each attempt. It may be repaired en route. It will be so marked before starting that it can be identified on reaching the other side.

THE ROYAL AERO CLUB GOLF MEETING.

Lieut.-Colonel J. T. C. Moore-Brabazon (scratch) won the medal competition, at the Royal Aero Club's meeting at Addington, Surrey, on November 18th, with a score of 82. In the afternoon Colonel Brabazon tied with Mr. F. Mead (handicap 2) at 4 down in the bogey competition.

The scores in the medal competition were :—Lieut.-Colonel J. T. C. Moore-Brabazon (scratch), 82; Mr. F Mead, 88 minus 2 equals 86; Mr. P. Stanley May, 86 plus 1 equals 87; Mr. E. B. Parker, 99 minus 10 equals 89; Mr. H. G. Burford, 101 minus 10 equals 91; Major S. V Sippe, 110 minus 18 equals 92.

The scores in the bogey competition were :—Lieut.-Colonel J. T. C. Moore-Brabazon (scratch), 4 down; Mr. F. Mead (handicap 2), 4 down; Mr. P. Stanley May (plus 1), 5 down; Mr. E. B. Parker (10), 6 down; Mr. S. Goodchild (9), 6 down.

AIRCRAFT IN PARLIAMENT

HOUSE OF COMMONS.

The following written answers were given on November 17th :—

AIRMEN UNDER SENTENCE.

Mr. **LUNN** asked the Under-Secretary of State to the Air Ministry what is the number of men of all ranks now serving sentences of more than three months' duration for military offences.

Mr. **CHURCHILL**: The number of airmen serving sentences of more than three months' duration for Air Force offences is twenty-eight.

TRANSPORT OFFICERS.

Mr. **RAPER** asked the Under-Secretary of State to the Air Ministry whether he is aware that the civil aviation transport officers have far more responsibility than officers holding a corresponding rank in the Royal Air Force; and why the Royal Air Force officers of equivalent rank receive considerably higher pay, free medical attention, and qualify for pensions.

Mr. **CHURCHILL**: In reply to my hon. friend's question, it is recognised that civil aviation transport officers have considerable responsibility, but not necessarily more than that of officers holding a corresponding rank in the Royal Air Force. Further than this, civil aviation transport officers do not have the additional risk incurred in flying and have not executive command of a fighting or other Service unit. I may add that the rates of pay have been under revision, and revised rates on an increased scale have recently been sanctioned by the Treasury.

Mr. **RAPER** asked the Under-Secretary of State to the Air Ministry whether the civil aviation transport officers' agreements are for six months only and terminable at one month's notice on either side.

Mr. **CHURCHILL**: The reply to my hon. friend's question is that civil aviation transport officers are appointed for six months, and that their agreements are terminable on three months' notice on either side thereafter.

Mr. **RAPER** asked the Under-Secretary of State to the Air Ministry whether it is laid down that only ex-pilots and ex-observers shall be eligible for appointments as civil aviation transport officers.

Mr. **CHURCHILL**: While it is the general intention to appoint ex-pilots and ex-observers as civil aviation transport officers, it is not intended that this ruling should be absolutely binding, as this might eliminate exceptionally suitable candidates who may not have had practical experience of flying.

HOUNSLOW AERODROME.

Mr. **RAPER** asked the Under-Secretary of State to the Air Ministry whether there is any intention of discontinuing the use of Hounslow Aerodrome as a control aerodrome.

Mr. **CHURCHILL**: I cannot make a statement with regard to the future of Hounslow Aerodrome at present. The question is now under consideration.

MARRIED OFFICERS (ALLOWANCES).

Mr. T. **THOMSON** asked the Under-Secretary of State to the Air Ministry whether he is aware that the regulations governing the issue of lodging and fuel allowances to married officers are not the same in the Air Force as in the Army, and that in the former case a married officer under the rank of major who was under thirty years of age when the present regulations came into force is treated less favourably than an officer serving under similar conditions in the Army; and, if so, is he prepared to reconsider the matter with a view to putting officers of both branches of the Service on the same footing.

Mr. **CHURCHILL**: The scheme of emoluments for the Royal Air Force must be taken as a whole, and a comparison of particular items with particular items in the arrangements of other Services is misleading. There are, however, points of difference in the system of allowances which are now being considered, one of these being the question whether all officers married at the date of the order may draw lodging allowance irrespective of age.

TRAINING, FARNBOROUGH.

Viscount **WOLMER** asked the Under-Secretary of State to the Air Ministry whether civilians are still being trained as pilots at the Royal Aircraft establishment, Farnborough, while certificated pilots are at present willing to fly and are not allowed to do so.

Mr. **KELLAWAY**: I have been asked to answer this question. A certain number of civilians are employed at the Royal Aircraft Establishment on special research work In order to obtain the fullest advantage from their work it is necessary that some of them, at any rate, shall actually take up and fly machines themselves. At the present time one civilian is so employed and three more are under training. Apart from this special work, all flying tests or experiments are carried out by R.A.F. pilots.

* * *

The following oral answers were given on November 18th :—

FLYING BOATS.

Lieut.-Col. **BURGOYNE** asked the Under Secretary of State to the Air Ministry whether it is proposed to encourage the development of flying boats as distinct from seaplanes; and, if so, what steps have been taken towards such encouragement?

Capt. **GUEST** (Joint Parliamentary Secretary to the Treasury): The reply to the first part of my hon. and gallant friend's question is in the affirmative; and to the second part that three different types of experimental boat seaplanes are on order and that, as already announced, one of the prizes in the British Aircraft Competition for 1920 is for a boat or float seaplane.

Mr. **BILLING**: Have the Admiralty been consulted as to the possible requirements of these seaplanes, or are experiments conducted without the co-operation of the Admiralty?

Capt. **GUEST**: I understand that the Admiralty have not been consulted.

Mr. **BILLING**: Having regard to the fact that all flying boats are essentially operative with the Navy, will he see that they are consulted?

Capt. **GUEST**: I will refer to the Secretary of State.

CIVIL AVIATION.

Lieut.-Col. **BURGOYNE** asked the Under Secretary of State to the Air Ministry what competitions have been organised by the Government for the development of civil aviation; do these competitions pay regard to the possible military value of the designs to be entered; and does he consider that it is possible in the future development of flying to combine the dual functions of both war and peace with practicability?

Capt. **GUEST**: The reply to the first part of my hon. and gallant friend's question is that three competitions are being organised for the year 1920. They are to be open to small aeroplanes, large aeroplanes, and seaplanes, respectively, the seaplane competition being framed with the object of developing a type of aircraft capable of alighting on and rising from land as well as water. The total prizes amount to £64,000. It is also under consideration whether, in addition to these, at a later date, a fourth competition should be organised for a large type of flying boat not required to possess amphibious qualities.

The reply to the second part of the question is that the above competitions are designed with a view to the attainment of safety and comfort of air travel. It is expected that a number of valuable lessons will be learned as the result of them, and many of these will undoubtedly be of great use from a military point of view. Where, however, military requirements diverge from safety requirements, the latter will be given the preference.

In regard to the third part of the question, it seems probable that the designs of civil and military aircraft will diverge as time goes on. But, whatever class of aircraft is experimented with, certain improvements are sought for; those may be in regard to aerodynamic qualities, method of construction, reliability of engines or petrol installation, etc., and the knowledge thus gained can be used equally in designing new civil or military aircraft.

* * *

The following oral answer was given on November 19th :—

ROYAL AIR FORCE CAMPS, SHROPSHIRE.

Capt. Sir B. **STANIER** asked the Secretary of State for War whether it has yet been settled which of the four camps used during the War by the Air Force in Shropshire are to be kept as permanent camps and which are to be dismantled?

Capt. **GUEST** (Joint Parliamentary Secretary to the Treasury): It is assumed that Shrewsbury, at which there is an Aircraft Acceptance Park, and a Mechanical Transport Repair Depot, but no aerodrome, Shawbury and Ternhill are the four camps referred to. Owing to the unavoidable delay in deciding the future size of the Royal Air Force, it has not been possible to settle the fate of many stations. It is, however, possible to say that either Shawbury or Ternhill will shortly be relinquished, and that in all probability the Mechanical Transport Repair Depot at Shrewsbury will be kept, while the Aircraft Acceptance Park will be disbanded. Decisions on all these points will very shortly be reached.

* * *

The following written answer was given on November 19th :—

POST OFFICE.—CONTINENTAL AIR RAIDS [*sic* !]

Mr. **GWYNNE** asked the Postmaster-General what is the present charge to the public per letter for delivering mails to the Continent by air, in addition to the postal fees; what is the similar charge made by France and Germany for air mails outside their country; what charges are made by the transport company to the Post Office; and what profit the Post Office makes on these transactions per letter.

Mr. **PEASE**: A special fee of 2s. 6d. per ounce in addition to the ordinary foreign postage is charged on correspondence accepted for transmission by the Air Mail Service from London to Paris. The special fee charge by the French Post Office in the reverse direction is 3 francs per 20 grammes. I am unable to state the charges levied in Germany for any similar service. Payment is made to the British company performing the London to Paris service at the rate of 2s. per ounce; and the remainder of the fee is intended to cover the cost of the special treatment of the correspondence and its express delivery.

* * *

The following oral answer was given on November 20th :—

ROYAL AIR FORCE.

Lord **HUGH CECIL** (by private notice) asked the Prime Minister whether his attention has been called to the anxiety expressed by some Members of the House in regard to the relation between the War Office and the Air Office now existing, and the consequent effects upon the Royal Air Force; whether the Government will make a full statement of their policy in regard to the Air Ministry and the Royal Air Force; and whether they will fix a day for a full discussion of that policy.

The **PRIME MINISTER**: My attention has been called to a resolution to that effect carried at a meeting of Members of this House. There has been no change whatever in the policy of the Government in regard to the Air Force, and I see no need for any discussion at present. If, however, there should be any general desire for such a discussion, my right hon. friend will, I am sure, try to arrange it, but the pressure of business is so great that it will be difficult to find time.

A CHILEAN MISSION.

One understands that the Special Mission from the Chilean Government, which is at present visiting this country in return for the visit paid to South America by the British Mission under Sir Maurice de Bunsen, will, in addition to its numerous engagements, visit the Elswick works and shipbuilding yards of Sir W. G. Armstrong, Whitworth and Co., Ltd., at Newcastle-on-Tyne, on Nov. 14th.

Special interest attaches to the visit in view of the fact that during recent years this firm has had very close associations with the Chilean Government and has undertaken large contracts in connection with additions to the Chilean Navy.

An immense amount of English capital is invested in Chili, and this visit will draw still closer the commercial trade relations between this country and Chili.

THE TURNHOUSE AERODROME.

At a recent meeting of the Lord Provost's Committee of the Town Council of Edinburgh, a letter from the Air Ministry was read. It stated that the Air Council were now compelled to dispose of Turnhouse aerodrome and that if the Corporation desired to consider the acquisition of the aerodrome and buildings they should communicate with the Director-General of Lands. The city appear to be willing to take control of Turnhouse aerodrome, but do not want to be saddled with the entire financial responsibility, which, they think, is a matter for the Government.

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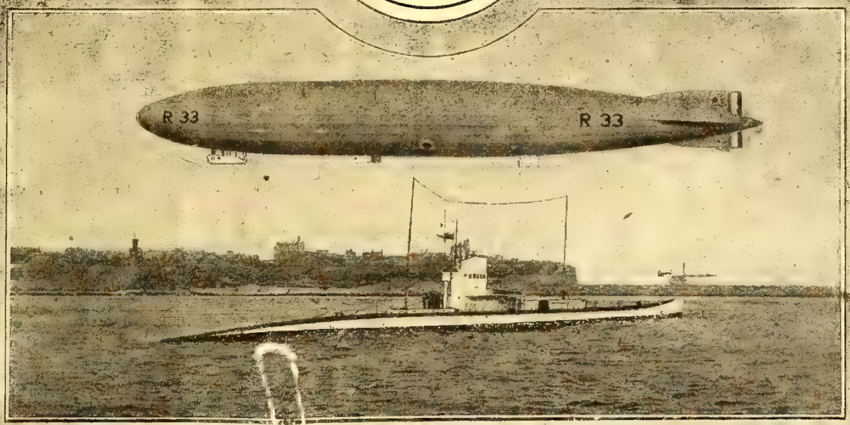

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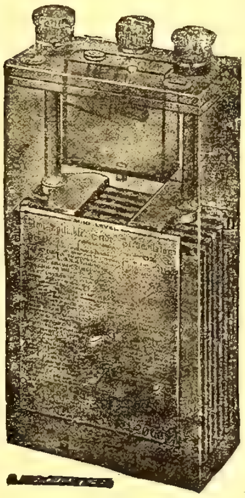

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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

ADMIRALTY, Nov. 17th.

R.N.R.—Lt. to be Lt.-Comdr.:—H. E. M. Watkins (Capt., R.A.F., temp. Maj.), Oct. 17th.

MILITARY.

WAR OFFICE, Nov. 17th.

TERRITORIAL FORCE.—INFANTRY.—8th Bn., Middx. R.—Sec. Lt. L. D. Wright to be Lt., and to remain secd. (R.A.F.), July 1st, 1917.

WAR OFFICE, Nov. 18th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—The notification in the "Gazette" of Aug. 20th, 1917, regarding temp. Lt. and Hon. Capt. C. A. Hooper, Spec. Res., is cancelled.

Special Appt. (graded as a Park Comdr.):—Temp. Lt. and Hon. Capt. C. A. Hooper, Spec. Res., and to be temp. Maj. whilst so empld., July 2nd, 1917.

MEMORANDUM.—Sec. Lt. A. Ward (attd. R.A.F.) retires, receiving a gratuity, Nov. 19th.

WAR OFFICE, Nov. 19th.

REGULAR FORCES.—INFANTRY.—SERVICE BATTALIONS.—R. W. Fus.—Temp. Sec. Lt. J. W. Kemberry resigns his commn. on appt. to R.A.F., Nov. 9th, 1918.

WAR OFFICE, Nov. 21st.

REGULAR FORCES.—INFANTRY.—SERVICE BATTALIONS.—S. Wales Bord.—Temp. Sec. Lt. W. A. Wright, from R.A.F., to be temp. Sec. Lt., March 3rd, 1918.

MEMORANDUM.—Lt. L. E. Taylor, M.B.E. (attd. R.A.F.), retires, receiving a gratuity, Nov. 22nd.

OVERSEA FORCES.—CANADA.—C.A.S.C.—Temp. Capt. V. H. Huston, M.C., ceases to be secd. to the Royal Air Force for duty, Sept. 30th.

TERRITORIAL FORCES.—YEOMANRY.—R. N. Devon.—Lt. A. R. Churchman, D.F.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in R.A.F., Aug. 1st, and retains rank of Lt.

Hamps.—Capt. R. A. Cooper, D.S.O., relinquishes his commn. in the T.F. on appt. to a permanent commn. in R.A.F., Aug. 1st, and retains rank of Capt.

Lincolnshire.—Lt. C. S. Porri relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

2nd County of Lond.—Lt. S. P. Marcus relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

1st Lovat's Scouts.—Capt. G. J. C. Maxwell, M.C., A.F.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

Notts (Sherwd. Rgrs.).—Lt. D. F. Stevenson, D.S.O., M.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

Shropshire.—Capt. W. G. P. Young, O.B.E., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

North Somerset.—Maj. J. H. S. Tyssen, M.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Maj.

Surrey.—Capt. J. Everidge, M.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

ROYAL ENGINEERS.—Field Cos.—Capt. (Brev. Maj.) A. Cleghorn, High. Divl. Engrs., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains his rank; Lt. F. H. Ronksley, M.C., W. Rid. Divl. Engrs., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

Signal Cos.—Capt. A. ap Ellis, W. Rid. Divl. Engrs., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

WAR OFFICE, Nov. 22nd.

REGULAR FORCES.—MEMORANDA.—Col. E. B. Ashmore, C.B., C.M.G., M.V.O., relinquishes the temp. rank of Maj.-Gen., and retains his appt. as Comdr., London Air Defence Area (Oct. 31st).

TERRITORIAL FORCE.—ROYAL HORSE AND ROYAL FIELD ARTILLERY.—Maj. S. Smith, D.S.O., A.F.C., 3rd E. Anglian Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Maj.

Capt. C. C. Durston, "A" Bty., H.A.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Capt.

Lt. G. Henderson, 3rd E. Lancs Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Lt.

Lt. R. S. McClintock, M.C., 3rd W. Lancs Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Lt.

Lt. J. L. Vachell, M.C., 4th Welsh Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Lt.

Lt. C. M. Eastley, 4th Wessex Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Lt.

Lt. H. M. Coombs, D.F.C., 2nd Wessex Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Lt.

AIR FORCE.

AIR MINISTRY, Nov. 18th.

The King has approved of the following rewards, conferred by the General Officer Commanding the North Russian Expeditionary Force:

DISTINGUISHED SERVICE ORDER.

Sqdn. Leader (A./Wing Comdr.) **ROBIN GREY** (Gren. Gds.).—Commanded the R.A.F., Archangel Area, with great distinction. Owing to the lack of pilots and observers during the winter, he carried out personally the most dangerous reconnaissances. On April 8th, 1919, at Obozerskaya, he carried out a reconnaissance in bad weather, bringing back valuable information. On April 22nd he carried out two most important reconnaissances with success, but met with a bad accident on landing the second time. Although considerably shaken physically, he continued to command the R.A.F. with marked success until the conclusion of the operations in North Russia.

Flight Lt. **NORMAN GORDON STEWART-DAWSON**, D.S.C.—Successfully led several raids with great success during the operations with the "Syren" Force in North Russia from June to September, 1919, notably in the attack on the enemy at Koikori on September 7th. Flight Lt. Stewart-Dawson has displayed exceptionally good qualities in leadership during these operations in the air, and equally distinguished services in ground-work organisation, where the difficulties were many.

BAR TO THE DISTINGUISHED FLYING CROSS.

Observer Officer **PARCELL REES BOWEN**, M.C., D.F.C. (5th Welsh R.).—On Aug. 24th, 1919, whilst observer on reconnaissance over the enemy aerodrome (Toima), he was fired upon at long-distance range from an enemy machine, both himself and the pilot being wounded. The pilot having collapsed from his wound onto the controls, Observer Officer Bowen managed to guide the machine from the back seat and flew homeward for a distance of 100 miles, by which time the pilot had slightly recovered and took control of the landing, which was safely made on the Bereznik Aerodrome. This officer's action was highly meritorious, and the guiding of the machine over a long distance was especially noteworthy in view of the wound which he had sustained in the right elbow.

Flying Officer **JOHN SHARPE GRIFFITH**, D.F.C.—Between May 5th and July 24th, 1919, this officer carried out 40 bomb raids and reconnaissances, all with great success and generally from a low altitude. On June 3rd, 1919, he dived to within 100 ft. of the ground and destroyed an enemy balloon, as well as several of its attendants. When a two-seater machine was not readily available he fitted a camera to his scout and, although it is very difficult to take photographs from such machines (and, moreover, he was inexperienced in such work), he succeeded in taking a very good mosaic which proved of great utility to the Commander of the Vologda Force. Flying Officer Griffith is an intrepid pilot and a very skilful all-round officer.

Flying Officer (A./Flt. Lt.) **FREDERICK IVES LORD**, D.F.C.—On June 27th, 1919, whilst piloting an R.E.8 machine, he found the position of the enemy on the Pinega River, four versts from Pilegori, and attacked the moving columns from a height of 200 ft. with such effect that their transport was stampeded and their expected attack broke down, without any casualties being sustained by our forces.

DISTINGUISHED FLYING CROSS.

Flying Officer **CYRIL ARTHUR BOUCHIER**.—A very skilful pilot of marked initiative and courage. Has been brought to notice on many occasions for the determination shown in his attacks. His methods are somewhat original. By flying low, parallel with and behind the enemy's lines, stampeding convoys and destroying wagons, he has caused the greatest confusion amongst the enemy, to the great advantage of our own forces. Flying Officer Bouchier is a highly competent reconnaissance officer.

Flight Lt. **OLIVER CAMPBELL BRYSON**, M.C., A.M. (Dor. Yeo.).—Has commanded a squadron of heavy bombing machines in North Russia during the whole of the summer of 1919, during which period he carried out a large number of successful raids on the enemy's territory. During the operations on the Dwina in August, and on the Pinega in September, 1919, he flew a Suipe machine with excellent skill and daring. A very gallant officer he has proved himself during these exceptionally difficult aerial operations.

Flight Lt. (A./Sqdn. Ldr.) **CHARLES RODERICK CARR**.—On June 17th, 1919, this officer flew a scout machine over the enemy aerodrome at Puchega, at an average height of only 50 ft., for 30 min. During this time he succeeded in setting fire to a Nieuport enemy machine, to a hangar which contained three aeroplanes (all of which were destroyed), drove all the personnel off the aerodrome, and killed some of the mechanics.

Observer Officer **FREDERICK TALBOT EADES**.—On June 9th, 1919, whilst serving with the "Syren" Force in North Russia, this officer was on night patrol (observer) in heavy rain, investigating the enemy's position off Schunga, on Lake Onega. Their position was attacked from a height of 300 ft. by machine-guns and bombs, the latter being thrown from the observer's cockpit. Having expended all ammunition, the machine returned to base, and after refilling again attacked and drove one gunboat ashore. A second gunboat was later seen to be in tow, presumably damaged in the attack. On the night of June 11th this officer was observer in the seaplane piloted by Flying Officer Isaac, when the enemy's line was twice cut, the machine sustaining considerable damage in the second attack.

Flying Officer **HAROLD ALFRED HAINES**.—During June and July, 1919, this officer performed numerous acts of gallantry in the operations of the "Syren" Force, North Russia. His work has been characterised by care and judgment, coupled with a total disregard of personal danger. He has taken part in numerous actions against the enemy from a very low altitude, and consequently at great risk, which resulted in the infliction of heavy casualties and great damage being done to the enemy's rolling-stock, ships, and bridges.

Pilot Officer **BERNARD ALLEN HEENEY**.—During the entire winter in North Russia this observer officer flew almost continuously over the enemy's lines on reconnaissance duties, under very arduous and dangerous circumstances. Pilot Officer Heeney was severely wounded on June 20th, 1919, whilst flying very low, assisting our Allied troops.

Flying Officer **FREDERICK HARRY ISAAC**.—On June 11th, 1919, whilst serving with the "Syren" Force in North Russia, this pilot was on patrol endeavouring to prevent reinforcements from reaching the enemy's front; he descended to within 50 ft. of the ground and, whilst exposed to heavy fire, succeeded in cutting their line with bombs. During the night the enemy repaired the line, and Pilot Isaac on hearing of this proceeded to the scene and again destroyed it from a height of only 30 ft., his machine sustaining heavy damage from the enemy's fire, as well as from his own bombs. The gallantry and determination of this officer will be more readily appreciated when it is borne in mind that his machine was a seaplane, operating seven miles inland.

Flying Officer **ARTHUR EDWARD LETTINGTON**.—During the operations of the "Syren" Force in North Russia, from July to September, 1919, this pilot has proved himself a gallant officer with marked ability and initiative. In machine-gunning the enemy from very low altitudes he has met with signal success. On August 3rd, 1919, in co-operation with our Lake Flotilla off Tolvuya, he descended and attacked the enemy quite near the water in the face of concentrated machine-gun fire, which resulted in the capture of the town and three of the enemy's steamers. Many other instances are recorded wherein this officer displayed gallantry of a high order in circumstances of great difficulty.

Flying Officer **LLOYD WESLEY MASON**.—This officer has shown great dash and courage whilst flying a Snipe at extremely low altitudes. He has taken part in operations throughout the summer both on the Dwina and Railway Fronts, and has attacked many targets with his machine-guns, dispersing troops and breaking up counter-attacks. In an attack on Puchega Aerodrome he descended very near the ground

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in an endeavour to silence machine-guns which were concentrating on his Squadron Commander's machine.

Flight Lt. **Alfred Price Maurice.**—Commanded the R.A.F. Unit at Obozerskaya since May 5th, 1919, with marked success, proving himself a most capable and reliable officer, adapting himself readily to the unusual and often unfavourable conditions. Flight Lt. Maurice has constantly carried out reconnaissances over the enemy's lines in dangerous circumstances, and has conducted bomb raids from low levels, notwithstanding the strong opposition from the enemy's anti-aircraft guns and machine-guns.

Flying Officer **John Percival Morkam** (Northants R.).—For more than six months, including the coldest and most inclement portion of the Arctic winter, this officer has displayed marked qualities of good leadership. In May, 1919, great efforts were made to prepare a forward summer aerodrome, but not with much success, and owing to the unsuitability of the available machines all attempts to rise from it failed—in one of these attempts at rising Flying Officer Morkam's machine was smashed and he himself severely injured. Notwithstanding these difficulties this officer, under urgent necessity, voluntarily undertook a reconnaissance flight of three hours over unknown and unmapped country, and returned with very valuable information, his petrol being absolutely exhausted on alighting. The nature of the country is such that no landing was possible anywhere on the return journey until his own base was reached. ("Syren" Force, North Russia.)

Flight Lt. **Walter Henry Park**, M.C.—An exceptionally good pilot who has displayed marked ability and courage during the operations with the "Syren" Force in North Russia. His service fights have been specially praised on six occasions by the Commander of the Force during a period of three months, and his determination in pressing home the attacks on the enemy contributed in a large measure to the success which attended the work of the Air Force.

Observer Officer **Edward Eric Spencer Wheatley** (R.A.).—Has rendered valuable services in artillery observation from low altitudes, having been mentioned several times for this work. During the operations on the Dwina in June, 1919, he carried out many contact patrols, flying very low over the heads of the enemy, keeping our headquarters constantly and accurately informed as to the position.

Distinguished Flying Medal.

No. 207177 Sjt. **Charles Victor Robinson**, late 205th Squadron, R.A.F. (France).—On May 18th, 1918, whilst acting as observer in a bombing attack on Chaulnes Railway Junction, his formation was attacked by seven enemy scouts. His machine was attacked simultaneously by two of these, one of which he shot down in flames. On the pervious day he dropped a 112-lb. bomb on this junction, causing a great conflagration. Sjt. Robinson has carried out 100 successful bombing raids, and is a most reliable observer.

FOREIGN DECORATIONS

The King has granted unrestricted permission for the wearing of the following decorations conferred for valuable services rendered in connection with the war:—

Conferred by the President of the French Republic.

Croix de Commandeur, Legion d'Honneur.—Maj.-Gen. Sir Frederick Hugh Sykes, G.B.E., K.C.B., C.M.G. (Retd. List).

Croix de Guerre, avec Palme.—Flying Officer Arthur Rowan (Salonika), Flight Lt. Charles Ernest Sherwin, M.C. (R.E., T.F.) (Aden).

Conferred by the President of the Portuguese Republic.

Chevalier, Military Order of Avis.—Capt. Bernard Purvis Broackes Carter, D.F.C. (France).

Conferred by the King of Roumania.

Chevalier, Order of the Crown.—Sec. Lt. George Ercole, late R.A.F.

Conferred by the Sultan of Egypt.

Order of the Nile, 3rd Class.—Wing Comdr. Charles Stuart Burnett, C.B.E., D.S.O. (H.L.I.); Wing Comdr. Norman Goldsmith, O.B.E. (R.A.); Sqdn. Leader Eric Lewis Conran, M.C. (21st Lcrs.); Maj. (T./Lt.-Col.) Robert Hall, O.B.E. (Capt., R.W. Fus.).

Order of the Nile, 4th Class.—Capt. Albert John Gordon Anderson (Lond. R.); Capt. Lionel Mundy Bailey, A.F.C.; Flying Officer Robert Charles Jenkins, M.C. (D.C.L.I.); Sqdn. Leader Charles Henry Nicholas, A.F.C. (S.W. Bordrs.); Flying Officer David Norrie Thomson, M.C. (Glas. Yeo.).

Military Medal.

The King has approved of the award of the Military Medal for bravery in the field to No. 26712 Flight Sjt. Edward Wardell (Putney), R.A.F., for gallantry in numerous actions extending from June, 1917, to the close of the war.

Air Ministry, Nov. 18th.

R.A.F.—Flying Officer J. Edelsten is granted a permanent commn. (A.), Aug. 1st.

The following temp. appt. is made:—Staff Officer, 3rd Class.—(P). Flight Lt. D. F. Massy, Sept. 1st (substituted for notification in "Gazette" of Oct. 10th, wherein this officer's initials were shown as "D. P.").

Flying Branch.—The following Lts. are graded for pay and allowances as Capts. whilst empld. as Capts. (A.):—W. Henderson to May 16th; (Hon. Capt.) I. G. Roberts to Sept. 6th, May 1st.

Sec. Lt. F. Thomasson, D.F.C., to be Lt., Feb. 24th.

Pilot Officer E. A. Siegrist to be Flying Officer, Sept. 10th.

Pilot Officer T. Q. Harvey relinquishes the grading for pay and allowances as Flying Officer on ceasing to be empld. as Flying Officer (O.), Oct. 21st.

Flight Cadet H. H. Bracher is granted a temp. commn. as Sec. Lt. (O.), Aug. 8th, 1918 (since killed).

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. (Hon. Lt.) P. R. Cook, July 8th, 1918 (substituted for notification in "Gazette" of Aug. 5th); Maj. H. Wyllie, O.B.E. (Capt., Wilts. R.), Capt. C. R. Robbins, M.C., D.F.C. (Lt., R.F.A.), Oct. 31st; Lt. H. J. Bullock (Lt., Norf. R.), Nov. 5th; Lt. (Hon. Capt.) R. E. Wilson (Capt., Hamps. R.), Nov. 6th; Sec. Lt. (Hon. Lt.) A. Cox (Lt., R. Welsh Fus.), Nov. 8th.

Transferred to unempld. list:—Lt. (Hon. Capt.) H. A. Henry, Jan. 15th; Sec. Lt. C. G. Ball, Sec. Lt. E. K. Blair, Sec. Lt. C. R. Gard, Sec. Lt. E. A. Locking, Sec. Lt. D. A. McCuaig, Sec. Lt. R. C. MacKinnon, Sec. Lt. J. C. McLachlan, Sec. Lt. R. J. Payne, Sec. Lt. G. C. Phillips, Sec. Lt. H. A. Phinney, Sec. Lt. G. L. Reid, Sec. Lt. C. W. Riley, Sec. Lt. W. J. Sturgeon, Feb. 1st; Lt. E. A. Newton, Feb. 17th; Lt. W. A. Bartlett, Feb. 24th; Sec. Lt. H. I. Terry, Feb. 28th; Capt. T. C. Trumble, March 1st; Lt. H. R. Casgrain, March 6th; Capt. C. T. Latch, March 9th; Lt. C. J. W. McKeown, March 16th; Sec. Lt. R. E. F. Tivy, March 22nd; Lt. C. I. Van-Nostrand, April 3rd; Capt. R. A. Logan, April 7th; Sec. Lt. J. O. Bach, April 8th; Lt. E. J. A. Burke, Lt. G. B. Wigle, Sec. Lt. W. J. Wigmore, April 13th; Sec. Lt. C. Cutler, April 17th; Sec. Lt. (Hon. Lt.) R. L. Cobham, April 19th; Sec. Lt. A. T. Wood, April 23rd; Capt. R. W. Buswell, April 30th; Sec. Lt. M. McIsaac, May 1st; Lt. S. Hill, May 2nd; Sec. Lt. P. V. Bedore, May 8th; Lt. W. W. Vick, May 10th; Lt. L. F. Williams, May 20th; Sec. Lt. F. G. H. Bar, June 16th; Lt. F. D. Slee, June 23rd; Sec. Lt. J. W. M. Proubert, June 27th (substituted for notification in the "Gazette" of July 4th); Sec. Lt. R. B. Wiggins, July 10th; Sec. Lt. F. Whiskin, July 11th; Sec. Lt. E. Wells, July 12th; Sec. Lt. S. L. Walters, July 25th; Lt. R. D. C. Blake, D.F.C., Aug. 12th; Lt. E. Blythe, Aug. 14th; Lt. R. de R. Brett, M.C., Aug. 25th; Sec. Lt. W. F. McCunn, Sept. 3rd; Lt. E. R. Danks, Sept. 7th; Lt. D. H. Batty, Lt. T. P. Fox, Sept. 9th; Lt. A. E. Chittenden, D.F.C., Sept. 10th; Lt. D. E. P. Chaplin, Sec. Lt. G. Graham, Sept. 11th; Sec. Lt. H. S. Cook, Lt. G. W. F. Darvill, D.F.C., Sept. 12th; Sec. Lt. W. H. Boite, Sec. Lt. S. G. Burgess, Lt. W. J. P. Jenner, D.F.C., Sept. 13th; Sec. Lt. J. H. Gray, Sept. 20th; Lt. G. H. Langley, Sept. 24th; Lt. H. S. Fey, Sept. 26th; Lt. T. Capps, Lt. F. Pooley, Sept. 27th; Sec. Lt. F. C. Annett, Sec. Lt. E. J. Edwards, Sec. Lt. E. V. Finland, Sec. Lt. H. R. Waddell, Sec. Lt. C. O. White, Sec. Lt. R. E. Williams, Sept. 28th; Sec. Lt. C. T. Ward, Sec. Lt. J. Weeding, Sept. 29th; Sec. Lt. H. W. Featherstonehaugh, Oct. 6th; Sec. Lt. J. Collins, Capt. R. C. Davies, Oct. 10th; Sec. Lt. J. D. Shotter, A.F.C., Lt. W. W. White, Oct. 22nd; Lt. W. T. Edwards, Capt. D. M. Tidmarsh, M.C., Oct. 28th; Lt. R. B. T. Hedges, Oct. 30th; Lt. A. M. Ross, Oct. 31st; Lt. R. K. Muir, Nov. 1st; Sec. Lt. R. S. Winter, Nov. 2nd; Lt. J. A. W. Armstrong, Lt. F. R. Keen, Capt. A. N. Kingwill, Sec. Lt. W. E. Osterburg, Capt. E. Selby, O.B.E., Lt. J. Spencer, Nov. 3rd; Sec. Lt. (Hon Lt.) W. A. S. Blucke, Capt. W. P. McDuff Brettell, Sec. Lt. H. S. R. Burt, Lt. B. Hackforth, Lt. B. A. Hewett, Maj. E. E. Hodgson, Lt. E. W. Horncastle, Lt. E. C. K. Kingston, Sec. Lt. A. Maybaum, Lt. H. F. Potter, Sec. Lt. (Hon. Lt.) C. W. Saggs, Lt. J. G. Simpson, Sec. Lt. J. M. Walmsley, Lt. J. C. Williamson, Lt. T. W. Williamson, Lt. E. B. Wilson, Lt. C. C. Woodall, Nov. 4th; Lt. G. G. L. Blake, D.F.C., D.C.M., Capt. P. L. Bryant, Lt. B. B. Caswell, Sec. Lt. G. P. W. Chandler, Lt. M. B. Lewis, Lt. W. A. McCulloch, Sec. Lt. J. J. W. Nelmes, Lt. (actg. Capt.) W. R. Phillips, D.F.C., Lt. K. MacP. Smith, Sec. Lt. W. T. K. Wallington, Lt. S. Wilkinson, A.F.C., Nov. 5th; Sec. Lt. A. Findley, Nov. 6th; Capt. M. Faux, Lt. L. W. R. Grubb, Sec. Lt. E. G. Marchant, Lt. F. R. S. Southon, Lt. P. E. Wood, Nov. 7th; Lt. A. R. Clark, Nov. 9th; Sec. Lt. B. Lones, Lt. J. W. Webb, Nov. 11th; Sec. Lt. J. E. Foden, Lt. J. G. Horne, Lt. A. J. R. F. Johnson, Nov. 14th; Lt. S. W. Walker, Nov. 16th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—P. J. Casey (caused by wounds), Nov. 10th; W. A. Horan (Lt., S. African F.A.) (caused by wounds), Nov. 14th; H. E. Hyde (contracted on active service), Nov. 16th.

The following Sec. Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—G. R. Newton-Bridle, July 25th (substituted for notification in "Gazette," Aug. 1st); H. Frew, Nov. 6th; V. M. Mitchell, Nov. 12th.

Sec. Lt. C. F. Lawson is antedated in his appt. as Sec. Lt. (O.), July 29th, 1918.

The notification in "Gazette" of Nov. 11th concerning Lt.-Col. G. C. St. P. De Dombasle is cancelled.

The notification in "Gazette" of Oct. 3rd concerning Sec. Lt. J. A. Peterson is cancelled.

The notification in "Gazette" of Oct. 28th concerning Sec. Lt. L. E. G. Judge is cancelled.

The notification in "Gazette" of Aug. 22nd concerning Sec. Lt. H. Toms is cancelled. "Gazette" of Aug. 5th to stand.

Administrative Branch.—Sqdn. Ldr. (actg. Group Capt.) W. P. Alexander to be Sqdn. Ldr. (from Aug. 1st to 31st), and relinquishes the actg. rank of Group Capt.

Maj. R. H. Howell to be Maj., from (S.O.), June 21st, 1918.

Lt. A. E. Burrowes is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., from May 1st to Aug. 9th.

Flight Lt. H. C. Jones relinquishes the grading for pay and allowances of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., Oct. 14th.

Flight Lt. H. W. M. Paul, O.B.E., M.C., to be Flight Lt., from (S.O.), Oct. 15th.

Lt. (Hon. Maj.) C. A. Cutbill to be Lt. (Hon. Maj.), from (S.O.), Nov. 26th, 1918.

Pilot Officers to be Flying Officers:—J. Earl-Willson, Aug. 17th; F. W. Garley, Oct. 1st.

P.F.O. L. F. Joyner is granted a temp. commn. as Sec. Lt., Sept. 12th, 1918 (substituted for notification in "Gazette" of Sept. 5th).

M. W. Binns is granted a temp. commn. as Sec. Lt., Dec. 7th, 1918.

Lt.-Col. (actg. Col.) A. W. C. McFall, O.B.E. (Lt.-Col., ret., Mil.), relinquishes his commn. on ceasing to be empld., and is permitted to retain the rank of Col., Sept. 18th (substituted for notification in "Gazette" of Oct. 10th).

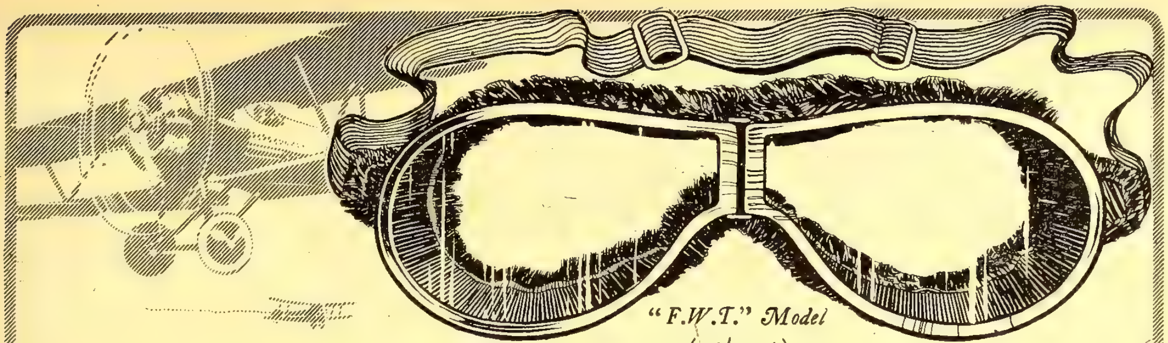
The following relinquish their commns. on ceasing to be empld.:—Lt. S. J. Stokes, Oct. 30th; Lt. A. H. Bottrell (Lt., R. War. R.), Oct. 31st; Capt. B. G. M. F. Nixon (Capt., Indian Army), Nov. 8th.

Transferred to the unempld. list:—Lt. W. Sutherland, Jan. 27th; Sec. Lt. F. J. E. Brake, Feb. 1st; Sec. Lt. R. F. Hyett, March 20th; Sec. Lt. L. J. Farley, April 1st; Sec. Lt. R. J. Williams, July 12th; Lt. M. R. Williams, July 23rd; Sec. Lt. W. J. Collins, Aug. 2nd; Lt. R. F. Leather, Sept. 4th; Lt. H. F. G. Findlay, Sept. 29th; Lt. R. B. Fricker, Oct. 9th; Lt. H. Harker, Oct. 10th; Lt. J. J. Wilson, Oct. 21st; Capt. W. J. Coombes, Sec. Lt. A. E. C. Halliday, Oct. 22nd; Lt. (Hon. Capt.) A. A. J. Poole, Lt. (Hon. Capt.) H. G. Whyte, Oct. 30th; Sec. Lt. A. Barrett, Sec. Lt. H. S. Harwood, Oct. 31st; Sec. Lt. (actg. Maj.) A. E. H. Hales, Nov. 1st; Lt. E. R. Seymour, Nov. 2nd; Sec. Lt. A. W. Howard, Sec. Lt. I. Powell, Sec. Lt. W. J. Tuckwell, Nov. 3rd; Lt. C. H. Stonham, Capt. E. Watson, Nov. 4th; Lt. H. L. McNaughton, Sec. Lt. (Hon. Lt.) R. E. Shears, Sec. Lt. B. Stone, Sec. Lt. H. C. Wilkin, Nov. 5th; Maj. N. C. Sampson, Nov. 6th; Lt. O. C. George, Nov. 8th; Lt. J. B. Pirie, Nov. 11th; Sec. Lt. E. Bentley, Nov. 14th.

Lt. T. Rumney (R.A.) relinquishes his commn. on account of ill-health contracted on active service, Nov. 7th.

Sec. Lt. B. L. Levi resigns his commn., being physically unsuited for duties of Pilot or Observer, and is permitted to retain his rank, April 4th (substituted for notification in "Gazette," Nov. 8th, 1918).

Transferred to unempld. list, and not "empld. list," as stated in "Gazette," Nov. 7th:—Lt. G. J. Maunsell, Aug. 21st; Sec. Lt. J. H. Norman, Aug. 25th; Capt. C. W. O'Connor, Sept. 1st; Lt. R. G. C. Pinfield, Sept. 3rd; Sec. Lt. A. H. Petch, Sept. 4th; Lt. J. Pell, M.C., Sept. 11th; Capt. A. Pantin, Sept. 12th; Lt. J. Woolfenden, Sept. 15th; Sec. Lt. J. Randall, Sept. 18th; Sec. Lt. S. St. Clare Stone, Sept. 23rd; Lt. A. Mitchell, Oct. 8th; Sec. Lt. A. A. Mackay, Oct. 9th; Sec. Lt. D. D. Carcary, Lt. G. D. Rowden, Lt. J. L. Stewart-Moore, Capt. W. McIvor Watt, M.B.E., Oct. 10th; Lt. J. Sharman, Oct. 11th; Sec. Lt. W. H. Bayley, Sec. Lt. (Hon. Lt.) R. S. Cowen, Lt. A. Lee, M.B.E., Oct. 12th; Maj. E. W. Hugh Kennedy, Oct. 13th; Maj. R. D. Carey, O.B.E., Oct. 14th, Lt. (actg. Capt.) J. C. Cantrill, Oct. 16th; Capt. E. P. L. Baker, Oct. 20th; Sec. Lt. H. H. Watson, Oct. 21st; Lt. W. E. J. Roberts, Oct. 22nd; Lt. N. A. Hardie, Lt. J. F. Nalder, Oct. 24th; Lt. (Hon. Capt.) L. F. Bettinson, Lt. P. Dalton, Capt. H. C. Mallett, M.B.E., Oct. 26th; Sec. Lt. T. Bathurst, Oct. 27th.



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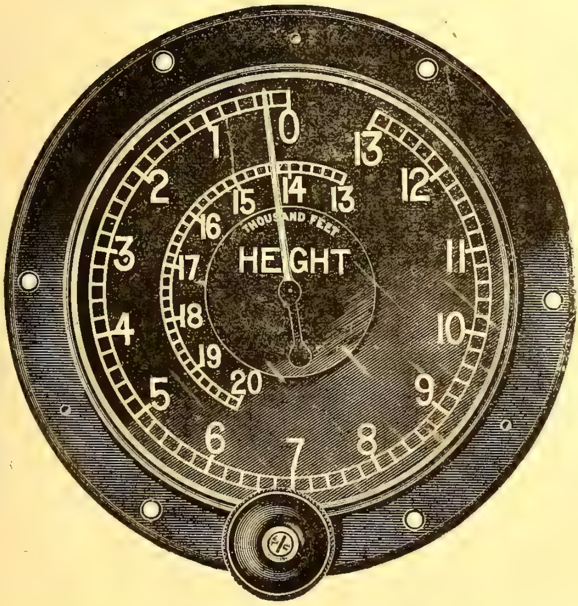

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The notification in the "Gazette" of Sept. 16th concerning Sec. Lt. T Norman Drake is cancelled. The notification in the "Gazette" of Oct. 28th to stand.

The notifications in the "Gazettes" of May 27th and June 17th concerning Maj. R. H. Howell are cancelled.

The notification in the "Gazette" of Nov. 7th concerning Sec. Lt. C O. D. Kidd is cancelled.

Technical Branch.—Flight Lts. to be Flight Lts., Grade (B), from (S.O.):—Flight Lt. L. Auker, O.B.E., Nov. 1st; (Hon. Sqdn. Ldr.) E. J. Sayer, M.C., Nov. 8th.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (A):—W. F. Floyd, from May 1st to July 31st; C. F. Blunt, July 17th.

Lt. (Hon. Capt.) D. A. English is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (B), May 1st.

Lt. J. A. Rutherford to be Lt., Grade (B), from (A. and S.), July 1st, 1918 (substituted for notification in the "Gazette" of Aug. 23rd, 1918).

Flying Officers to be Flying Officers, Grade (B), from (S.O.), Nov. 1st:—H. J. Birtles, E. H Eldridge

Sec. Lt. E. Hague to be Lt., April 19th

Sec. Lt. W. Parkinson to be Lt., Jan. 26th, without the pay and allowances of that rank prior to April 9th.

Sec. Lt. H. W. Nicholl to be Lt., April 19th, without the pay and allowances of that rank prior to May 1st (substituted for notification in the "Gazette" of May 24th).

Pilot Officer J. W. Caddy to be Flying Officer, Oct. 1st.

Sec. Lts. to be actg. Lts. whilst empld. as Lts., Grade (A):—H. H. Weller, May 1st; (Hon. Lt.) D. Sinclair, from May 1st to Oct. 14th.

Pilot Officer A. E. Gliddon to be Flying Officer without the pay and allowances of that rank, Oct. 1st.

Pilot Officer (actg. Sqdn. Ldr.) J. W. Tattersall relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., Grade (A), Oct. 8th.

Sec. Lt. C. H. N. Nunn relinquishes the grading for pay and allowances as Lt., Grade (B), May 13th (substituted for notification in the "Gazette" of Oct. 3rd).

Transferred to the unempld. list:—Sec. Lt. J. M. Blake, Jan. 13th; Lt. C. M. Seth-Ward, May 13th; Lt. A. W. Allan, Sept. 16th; Lt. A. Champion, Sec. Lt. S. E. White, Sept. 19th; Sec. Lt. (Hon. Lt.) H. I. Allen, Sept 26th; Lt. H. G. Welsford, M.B.E., Sept. 29th; Capt. S. H. Bird, Oct. 7th; Lt. H. P. Bramwell, Lt. A. R. Jones, Oct. 10th; Sec. Lt. L. J. Clements, Lt. W. Dawson, M.B.E., Oct. 14th; Capt. K. J. Young, Oct. 23rd; Sec. Lt. (Hon. Lt.) C. M. W Park, Capt. O. S Stiles, Oct. 30th; Lt. (Hon. Capt.) H. Gardiner, Sec. Lt. R. A. Hornsby, Oct. 31st; Capt. D. P. Geddes, Capt. A. E. Siddons-Wilson, M.B.E., Lt. W. E. Westwood, Nov. 1st; Sec. Lt. (Hon. Lt.) J. J. Galvin, Lt. R. F. Howard, Sec. Lt. U. Jacques, Nov. 3rd; Sec. Lt. K. E. Beswick, Maj. M. K. Cooper-King, Lt. L. A. Mudge, Sec. Lt. S. Maunder, Lt. W. J. Scott, Lt. D. B. Thorp, Nov. 4th; Sec. Lt. (Hon. Lt.) N. A. Grandage, Sec. Lt. R. E. Hardy, Sec. Lt. R. A. Munday, Sec. Lt. J W. Rodmell, Nov. 5th; Sec Lt. E. Downer, Sec. Lt. G. W. Webb, Nov. 6th; Lt. J. H. Hill, Sec. Lt J. W. Watts, Nov. 7th; Sec. Lt. C. B. Brown, Capt H. E. Horne, Sec. Lt. R. H. B Tomlinson, Nov. 8th; Sec. Lt. H. O. Keenan, Maj H. M. Whitley, Nov. 11th.

Lt. H. J. Dolan relinquishes his commn on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 7th.

Lt. A. Ward (Sec Lt., Extra Reg. Empld. List) resigns his commn., Nov. 19th.

The notification in the "Gazette" of Oct. 17th concerning Pilot Officer E. Parrett is cancelled.

Medical Branch.—Capt. J. A. Giles to be actg. Maj. whilst empld. as Maj., July 2nd.

Flight Lt. G. Cranstoun to be actg. Sqdn. Ldr. whilst empld. as Sqdn. Ldr., Sept. 4th.

Capt. G. W. Harbottle is transferred to the unempld. list, Nov. 1st.

Dental Branch.—S. G. Smith is granted a temp. commn. as Lt., July 1st, 1918 (substituted for notification in "London Gazette" of June 28th, 1918, in which he is shown under "Medical" Branch).

Memoranda.—The following Prob. Flight Officers are granted hon. commns. as Sec. Lts.:—A. C. Law, Nov. 30th, 1918; J. Cumberbirch, Dec. 10th, 1918; B. M. Bell, Feb. 3rd; E. E. Mays, Feb. 12th; A. W. Brayley, Feb. 14th; G. R. A. Booker, Feb 18th; J. A. H. Chancellor, Feb. 22nd; W. J Costello, Feb 27th; L. H. K. Ingham, March 8th; J. H. Allen, W. E. W. Holder, March 14th; W. M. Cowper, March 20th; C. W. Brown, April 8th; G. L. H. Byrne, April 15th; H. V. Glover, April 16th; A. J. Barrett, April 18th.

The following Cadets are granted hon. commns. as Sec. Lts.:—137293 F. S. W. Brice, March 21st; M/6496 R. D. Pollock, March 27th; 69425 W. G. White, April 3rd; 110060 F. N. Carwin, April 20th; 202263 S. J. Burrell, June 20th.

Group Capt. A. M Longmore, D.S.O., is placed on the half-pay list, Oct. 20th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—T. G. Green, W. E. Pickerill, W. J. Speller, H. T. Woodsmith, Sept 16th

Transferred to the unempld list:—Lt. W. Watters, from (S.O.), March 14th; Lt. J. A. W. Bourne, from (S.O.), Sept. 12th; Capt. C. A. W. Taylor, from (S.O.), Oct. 7th; Capt. L. P. Ball, O.B.E., from (S.O.), Oct. 31st; Capt. H. G. Wheeler, from (S.O.), Nov. 3rd; Lt. A. G. Stradling, from (S.O.), Nov. 5th.

Lt.-Col. J. D. Mackworth, C.B.E (R.W. Surrey R.), relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 24th (substituted for notification in the "Gazette" of Nov. 7th).

Lt.-Col. G. R. A. Holmes, C.M.G., O.B.E., relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 12th.

PERSONAL NOTICES.

NAVAL.

Engagement.

EVANS—LINDSELL.—A marriage has been arranged between Mr. M. W. H. Evans, late flight lieutenant, R.N.A.S., only son of Mr. W. J. Evans, C.B.E., and Mrs. Evans, of Glencourt, Brondesbury Park, and Nancy, elder daughter of Mr. and Mrs. R. J. Lindsell, of Fairfield Bury, St. Ives, Huntingdonshire.

Birth.

NICHOLL.—On Oct. 29th, at 55, Welbeck Street, W.1, to Peggy, wife of Lieut.-Col. Vincent Nicholl, D.S.O., D.S.C., R.A.F.—a son.

MILITARY.

Death.

GILBERTSON.—Lieut. Dennis Henry Stacey Gilbertson, 6th Northamptons and 70th Squadron, R.A.F., who was previously reported missing on Sept. 4th, 1918, is now officially presumed to have been killed in action on that date at Ecaillon. He was the only son of A. Stacey Gilbertson and Mrs. Gilbertson, of Mangrove, Hertford, and 41, Earls Avenue, Folkestone.

Engagements.

GRAHAM—BODINGTON.—A marriage has been arranged and will shortly take place between Squadron Leader J. B. Graham, M.C., A.F.C., R.A.F., son of the late Malcolm Graham, Yankalilla, South Australia, and Lillias, widow of Capt. C. H. Bodington, Royal Horse Guards, elder daughter of Mr. and Mrs. C. May Somerville, 49, Holland Park, W.

WEBB-BOWEN—HADLEY.—A marriage has been arranged, and will take place very shortly, between Air Commodore T. I. Webb-Bowen, C.B., C.M.G., R.A.F. (late Brig.-Gen. R.F.C.), and Violet, elder daughter of Mr. and Mrs. C. A. Hadley, of Johannesburg, South Africa.

Marriages.

ROBERTS—WEST.—On Nov. 7th, at St. Paul's, Covent Garden, Herbert Charles Roberts (late H.A.C. and R.A.F.), youngest son of the late Henry Roberts, of Upper Clapton and Henllan, North Wales, was married to Marjorie Beatrice West, only daughter of the late Stephen West, of Croydon, Surrey, by the Rev. A. Monks.

STATON—WORKMAN.—On Nov. 15th, 1919, at Holy Trinity Church, Northwood, Lieut. William Ernest Staton, M.C., D.F.C., R.A.F., elder son of Mr. and Mrs. W. N. Staton, of Hatton, Burton-on-Trent, was married to Norah Carina, second daughter of Mr. and Mrs. R. D. Workman, of Overdene, Northwood, Middlesex, by the Rev. H. V. Farnfield, M.A.

Births

GOSSAGE.—On Nov. 21st, 1919, at 12, Cornwall Gardens, S.W.7, the wife of Squadron-Leader E. L. Gossage, D.S.O., M.C., Royal Air Force, late Royal Artillery, of a son.

HEGARTY.—On Oct. 15th, at Lampeter, Mount Hermon, Woking, the wife of Captain H. G Hegarty, M.C., late R.A.F., of a daughter.

AIR FORCE.

Engagements.

HUGHES—MAINE-TUCKER.—The marriage between Captain Eric Yorath Hughes, late R.A.F., elder son of Sir Thomas Hughes and Lady Hughes, O.B.E., of Cardiff, to Miss Dulcie Maine-Tucker, younger daughter of the late Mr. W. H. Maine-Tucker, of Penarth, Glam., will take place at St. James's Church, Piccadilly, on Wednesday, Dec. 17th.

McKEAN—WARREN.—A marriage has been arranged, and will take place shortly, between Capt. Lionel Douglas Dalzell McKean, R.A.F., youngest son of Mr. and Mrs. Hugh McKean, of Rathgar, Dublin, and Phyllis Maude, youngest daughter of A. J. Warren, late British Vice-Consul of Java, and Mrs. Warren, of Burghdown, Epsom.

MATHEW—ALEXANDER.—The engagement is announced between Flight Lieut. Cecil George Mathew, R.A.F., younger son of A. C. Mathew, of Cranford, Church Crookham, Hants, and Emily Geale Hester Lowry, youngest daughter of the late Colonel C. M. Alexander and Mrs. Alexander, of Termon, Carrickmore, Tyrone.

VOSPER—VAUGHAN.—The engagement is announced between Mr. R. A. Vosper, R.A.F., only son of H. O'D. Vosper, Esq., and Mrs. Vosper, of Plymouth, and Hilda, youngest daughter of Mr. A. Vaughan and Mrs. Vaughan, of New Cross, London.

YOUNG—JAMESON.—The engagement is announced between Capt. P. H. Young, R.A.F.M.S., Halton Camp, Bucks, and Jean, younger daughter of Mr. H. Jameson, Craigard, Perth, N.B.

Marriage.

BEETON—TILLSTON.—On Nov. 11th, by special licence, at St. Peter's Church, Brighton, Capt. Bernard James Beeton, M.B.E., R.A.F., was married to Dulcie, daughter of Mr. and Mrs. Tillston, of Brighton, by the Rev. Canon and Prebendary F. Dormer Pierce, B.A., Vicar of Brighton.

Births.

BOUSTEAD.—On Sunday, Nov. 2nd, at Hove, the wife of Capt. Cedric Boustead, late R.A.F., of a daughter.

SMYTHIES.—On Oct. 26th, at Colasta, The Avenue, Andover, the wife of Major B. E. Smythies, D.F.C., R.A.F.—a daughter.

STREATFEILD.—On Oct. 26th, at 68, Holland Road, Kensington, W., to Marjorie and Geoffrey H. B. Streatfeild (late Capt., R.A.F.)—a daughter.

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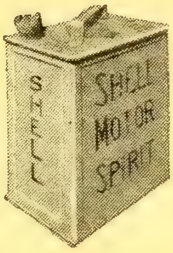

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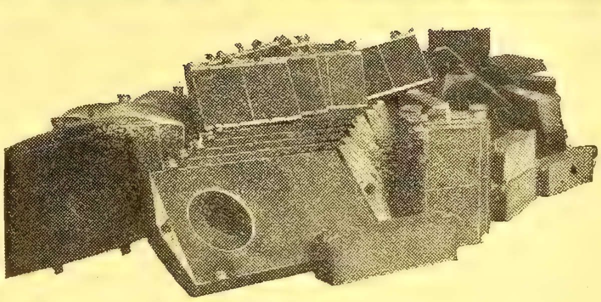

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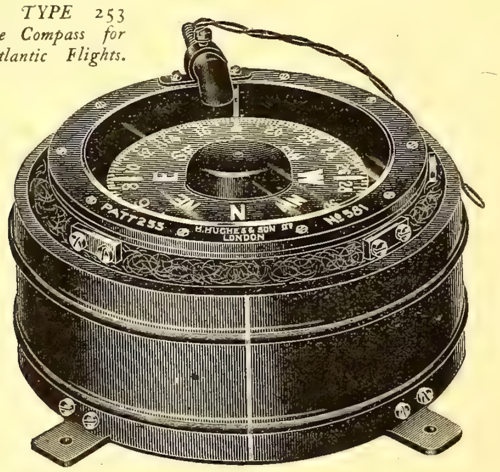

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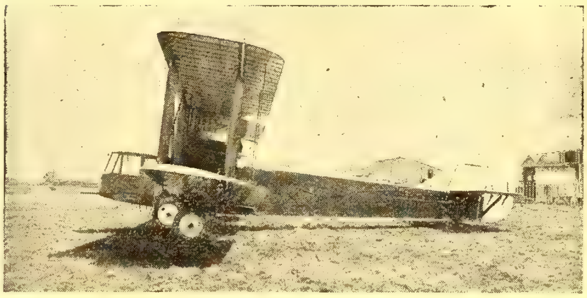

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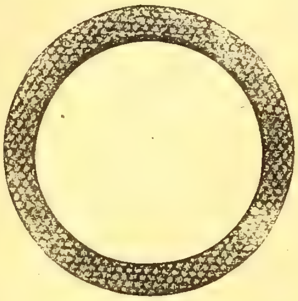

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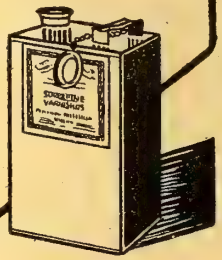

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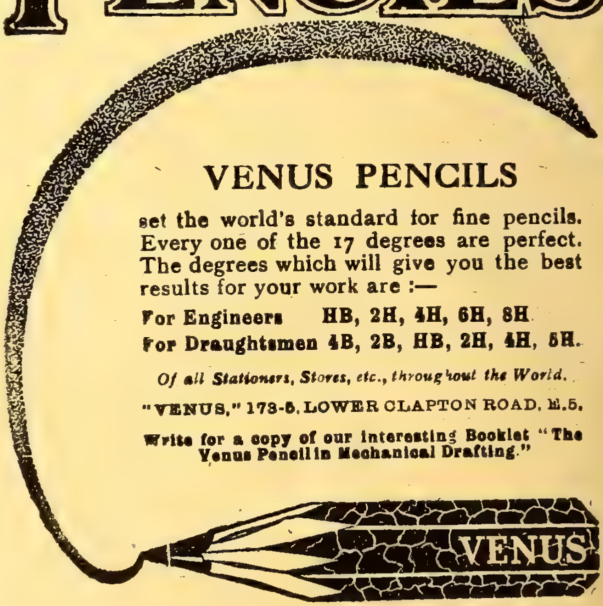

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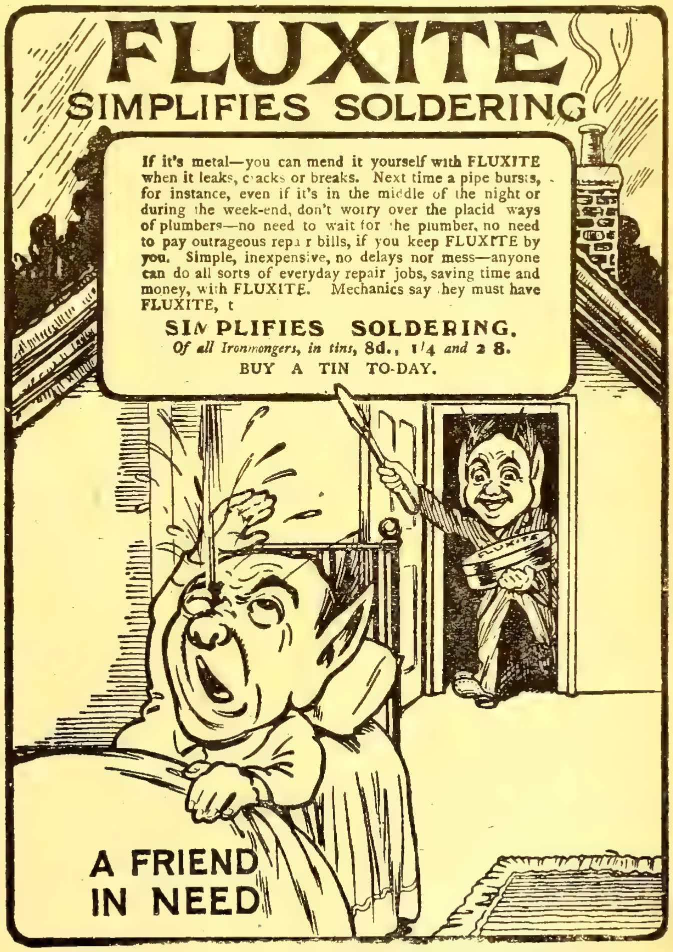

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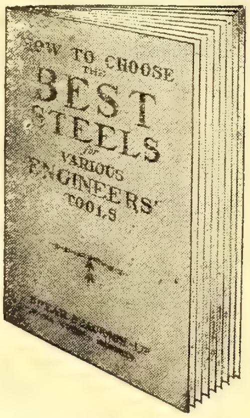
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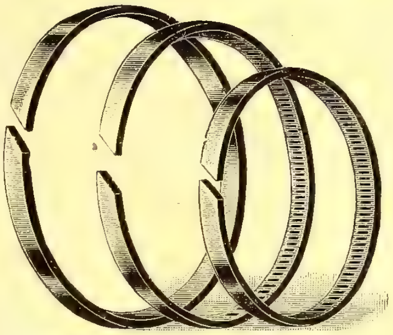

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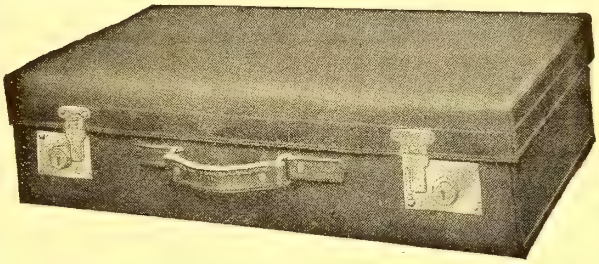

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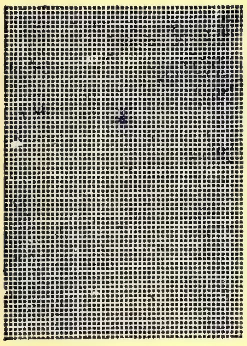

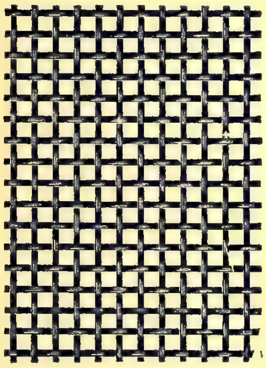

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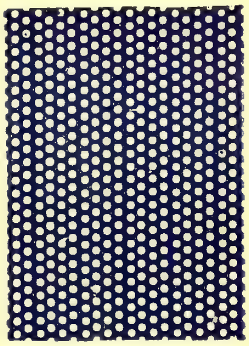

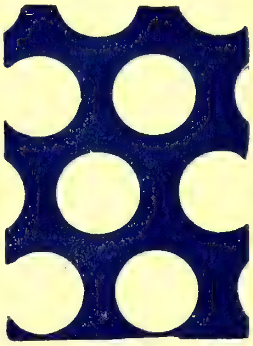

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ON SIX MONTHS OF CIVIL AVIATION—II.

RECORDS, SATISFACTORY AND UNSATISFACTORY.

Ignoring the first paragraph, which is merely a promise, or a threat, of more Regulations, and seems to have wandered into this position by accident, the figures which follow from the official document are of remarkable interest :—

> An Air Navigation Bill, to make operative the International Air Convention recently signed in Paris in accordance with its requirements, is being drawn up under which the Regulations revised to date will be reissued.
>
> The following approximate figures, which have been supplied voluntarily by certain of the firms engaged in civil air traffic, are interesting as showing the extent of the work carried out, and for the mileage covered the number of accidents must be regarded as remarkably small.

Number of hours flown	4,000
Number of flights	21,000
Number of passengers	52,000
Approximate mileage	303,000
Total number of accidents	13
Number of fatal accidents	2

	Total Numbers.	Per 1,000 Flights.	Per 1,000 hours flown.
Pilots killed	2	.095	.5
Pilots injured ...	6	.286	1.5
Passengers killed	Nil	Nil	Nil
Passengers injured	10	.476	2.5

> Percentage of passengers injured to those carried, .019; in other words, for every 5,200 passengers carried only one has been injured.
>
> It will be noted that the great majority of the flights were of short duration.
>
> Indeed, much of the work during the period under review may be said to have been of an educative character. At the same time, since the greater number of accidents occur in getting off and landing, the proportion of accidents to flights made is a truer guide than that for hours flown. The figures clearly establish the fact that firms are intent on securing the safety of the public and also that the regulations in force are in principle suitably designed to attain that object.

The figures speak for themselves and need no explanation. The total number of passengers carried (52,000) is probably an under-estimate, for it is supplied "voluntarily by certain of the firms," which leaves one to assume that others, especially the unlicensed pilots with uncertificated machines, did not supply their figures. Also it does not include the illicit "joy-rides" given to civilians on R.A.F. machines.

The mileage is certainly an under-estimate, at any rate if calculated on a "passenger-mile" basis. It is probably about right as a "machine-mile" calculation, but the shortest joy-ride of 10 minutes must cover quite 10 miles, and so three passengers and a pilot in an Avro represent 40 "passenger-miles." On that basis, 750,000 passenger-miles for the four months from mid-June (when flying really began) to mid-October (when it ended) would be quite a fair estimate.

A very ingenious and quite sound point is made by the compilers of the Synopsis in claiming that "the proportion of accidents to flights is a truer guide than that for hours flown"—or, one would add, for passenger-miles. But, for comparison with other means of transport, especially with steamer lines and railways which keep careful statistics, passenger-mile figures count for most. One doubts whether any railway line can beat half a million passenger-miles without a death and with only two railway servants killed.

One's only quarrel with this section of the Synopsis is the claim that "the figures clearly establish the fact that . . . the regulations in force are in principle suitably designed to attain" the safety of the public. This is, in effect, a claim that the Department of Civil Aviation is largely responsible for the excellent passenger-mile record.

One denies any right to such a claim. The Department delayed the start of civilian flying for months, when joy-ride concerns might have been making good money. It prevented good pilots and good machines from getting to work by its eternal delays and imbecilities and petty annoyances over certificates and permits and so forth. It allowed incompetent minor officials to be a perpetual nuisance to everybody. And compared with its method of conducting correspondence, those of the famous Circumlocution Office were models of expeditiousness.

If there is anything to be said on the subject it is simply that "the figures clearly establish the fact that firms intent on securing" business will get it, in spite of any civilian Government Department.

THE QUESTION OF ACCIDENTS.

We now come to the all-absorbing question of accidents, as follows :—

> (*d*) ACCIDENTS.—Stress has been laid on the necessity for the punctual report and investigation of accidents, as only by this means can the weak points in administration, personnel and material be eliminated and the safety of the public proportionately increased. The organisation for this work built up during the war by the R.A.F. has been absorbed by the Civil Aviation Department. On receipt of the report of an accident involving a fatality, or injury to personnel, or serious damage to a machine, experts are immediately sent to investigate matters on the spot. This work has fortunately been exceedingly light and the facilities afforded by the firms concerned have enabled the necessary investigations to be carried out satisfactorily.

It is certainly satisfactory to know that accidents have been so few and that the firms concerned have afforded facilities to the Accidents Committee to investigate. But what is the good of investigating accidents if nobody is any the wiser for the investigation except a few people in the Air Ministry?

These are two excellent reasons why a report should be published on every accident which is investigated by the Committee, whether fatal or not. The first is that all who are concerned with the design and construction of aircraft, or who are interested in using, buying, or selling aircraft, should know why accidents happen, and should thus be educated in means of preventing them or should be instigated to think out ways of preventing them in future. The second is that the publication of such reports would dispel once and for all the crop of foolish rumours which surrounds every notable accident immediately after it has happened.

The publication of such reports is desirable in the interests of Civil Aviation in general and of the makers of the smashed machines in particular. It is possible that reports on accidents are circulated to certain British aircraft constructors, but that is not enough. Knowing the habits of British business offices one is sure that such reports would never reach the right people in the works, and even if they did they would not be seen by the thousands of others to whom they would be of great value.

It would probably be inadvisable to circulate them to the daily Press, who would merely seize upon the most ghoulish details and star them in big headlines. But they should certainly be published in the technical papers.

DISAPPOINTING FIGURES.

The next section is devoted to the disappointing figures for licenses, thus :—

(*e*) AERODROMES AND LICENSING.—In the same way as ships require harbours, so aeroplanes and seaplanes require aerodromes, which have to be built, inspected and licensed. Licences also are necessary for the pilots competent to control the machines, and for the officials at the aerodromes qualified to pass machines as fit for flying, while every civil machine has to be registered and numbered in the same way as a motor-car, and, if flying for hire, must in addition be certified as "airworthy." A special branch of the Department of Civil Aviation deals with this and kindred questions, and between May 1st and October 31st has granted the following licences and certificates :—

Licences for Pilots	374
Licences for Ground Engineers	258
Licences for Engineers	1
Licences for Navigators	2
Licences of Aerodromes	92
Certificates of Registration	303
Certificates of Airworthiness	241

The reason that there has as yet been little or no demand for engineers' or navigators' licences, is that conditions which would necessitate the inclusion of these classes in the crew of an aircraft are not yet common.

The large majority of the aerodromes licensed have been those in the vicinity of towns required temporarily by firms engaged in carrying passengers for short flights.

It is believed that the London terminal Customs aerodrome at Hounslow is the only one of its kind in Europe, and that the organisation for dealing with regular traffic arriving by air from other countries has not elsewhere been so fully developed. Lympne for aeroplanes and Felixstowe for seaplanes have also been constituted as Customs aerodromes.

During the six months under review, an approximate sum of £2,000 has been received at Hounslow, in payment of housing and accommodation fees, etc., apart from the sale of petrol and oil. From this fact it is fair to assume that a definite revenue will be derived from the main aerodromes of the future.

In addition to the licensing of aerodromes already carried out negotiations are in progress for the establishment of land or sea aerodromes under the control of the Municipal Authoities, to serve the undermentioned localities :—

Edinburgh.
Newcastle.
Southport.
Liverpool.
Leeds.
Bradford.
Hull.
Manchester.
Margate.
Southampton.

For emergency landing grounds a large number of possible sites have been notified by Lords Lieutenant. The inspection of these sites, however, must, of necessity, cover a considerable period, and some time must elapse before maps showing the emergency landing grounds available in each county can be completed.

The figures for all licences are very unsatisfactory, and show in a most disappointing manner how small is the total amount of civilian flying. It is true that a certain number of unlicensed aviators and aeroplanes are flying, but there are not enough of them to affect the figures noticeably.

When one considers the thousands of pilots who were flying during the war it is lamentable that less than 400 should be flying to-day. There must have been nearly as many before the war, seeing that 863 aviators' certificates had been issued up to August 4th, 1914, in this country alone. It is true that many of them were Service people and that many never flew after qualifying for their certificates, but there certainly seemed much more flying before the war than there has been this year.

The figures for airworthiness certificates are equally disappointing. It hardly looks as if there can have been much civilian flying if only 241 machines were employed. Still, it must be remembered that the Air Ministry prohibited civilian flying until so late in the year that it was impossible to make proper preparations for commercial work, and so all the organisation was of the sketchiest kind. Also, it must be remembered that the Committee of the Royal Aero Club, which appointed itself many years ago as the governing body for the Sport of Flying, has done nothing whatever to promote sporting flying right through the year, and that when it did busy itself over one event (the Schneider Cup Race) it made such an unholy mess of it that it did far more harm than if it had stopped at home and attended to its job of hotel-keeping—the only job at which it displays any competence or intelligence.

Therefore perhaps the figures are not so bad as they look, and indicate that the Aircraft Industry has achieved some success in spite of the Air Ministry and the Royal Aero Club.

THE HOUNSLOW ERROR.

One is mildly puzzled by the claim that Hounslow is the only terminal Customs aerodrome in Europe. One was under the impression that Le Bourgêt near Paris, Soesterburg near Amsterdam, and the aerodrome near Brussels fulfilled similar functions.

In any case Hounslow is no cause for congratulation, for it is the worst place possible for the purpose, being utterly inaccessible either by road or rail, as well as being on the wrong side of London. It is a consolation to learn—though not from this document—that Cricklewood is to be a Customs aerodrome in future. The astute Mr. Handley Page is to be congratulated. Indubitably Cricklewood will oust Hounslow as the recognised London terminal, for no other aerodrome can be found so near London or so well situated for quick communication by road.

One regrets to read that the impoverished Aircraft Industry has been "soaked" for £2,000 "in payment of housing and accommodation fees, etc." This accommodation could well have been given free of charge for the first few years.

Lympne is perhaps useful as an emergency landing aerodrome, and Felixstowe is the natural port of call for seaplanes from Holland, but one believes that a Southampton-le Havre air line will be very successful ere long, so it seems that another station will be necessary at Southampton.

It is encouraging to see that some Municipal Authorities are considering taking control of local aerodromes. As a rule town councils and such bodies are at least as stupid as Government departments or the Committee of the Royal Aero Club, but doubtless there are exceptions. It will be interesting to see which of the cities mentioned do in fact display intelligence and become possessed of municipal aerodromes.—C. G. G.

(*To be continued.*)

THE GREAT PEACE SCANDAL.

Probably the most scandalous of all the scandals of this devastating Peace is the finding of the Tank Inquiry Committee, which was published on Nov. 28th.

By this finding Sir William Tritton and Major Wilson were given £15,000 to divide between them. Major-General Swinton was given £1,000. Sir E. Tennyson d'Eyncourt was given £1,000. Mr. R. F. Macfie was given £500, and Mr. A. C. Nesfield was also given £500.

Nobody grudges the £15,000 to Sir William Tritton and Major Wilson. If anything, they deserved more. As engineers they were set to work to make a production job of the elementary armoured caterpillars on which the Landships Committee of the period decided. They produced in quantities, they did good work, and they are now rewarded.

Major-General Swinton also probably deserved more, for, besides doing the organising work which was his duty, he turned his great ability onto supplementary work as a propagandist. Also, being a Sapper officer, he contributed materially to the mechanical efficiency of the apparatus.

Why Sir Tennyson d'Eyncourt received anything is not very clear. As an Admiralty designer he was turned onto design, and he designed, as was his duty. His regular pay was presumably based on his ability as a designer, and if his ability in this instance appeared abnormal the Admiralty should have increased his pay. Still, none can grudge him a £1,000 bonus for his share in producing an absolutely novel instrument of war.

Nor presumably will anybody grudge Mr. A. C. Nesfield the gift of £500 for any extra brainwork or overtime which he may have expended at his works when they were occupied in producing the experimental models of tanks ordered by Commander Boothby, then O.C. Armoured Car Division, R.N.A.S.

The scandal is that Mr. R. F. Macfie, the real originator of the Tanks, should be insulted with a paltry £500 after having introduced not only the vehicle itself but its proper method of operation to the Government.

QUEER PROCEEDINGS.

Some of those who attended the meetings of the Inquiry Committee, among them the present writer, were surprised at the curious way in which some evidence was admitted while other evidence of greater importance was ruled out of court. It was plain that under such conditions the Committee could never have the whole story placed before them.

And it was equally surprising to find that the various claimants were limited as to the number of witnesses whom they were allowed to call. The impression conveyed to one was that the Committee was more anxious to get the whole thing over and finished than it was to thrash each claim out to the limit in an endeavour to discover the truth.

Nevertheless, after Colonel DelaCombe had stated that he had introduced Mr. Macfie to the Admiralty in order that his armoured caterpillar design might be considered: after Colonel Risk, the first O.C. Armoured Cars, had stated that he had introduced Mr. Macfie to his armament officer in order to discuss details of the machine: after Colonel Boothby, the second O.C. Armoured Cars, had related how he detailed Mr. Macfie to construct a working model of his machine; and after it was clearly shown that the ultimate Tanks derived from these early experiments, one would have thought that even a Government Committee would have recognised his right to be considered the originator of the idea.

Given such recognition it is difficult to see how he deserved less reward than did the two excellent engineers who produced the design which at last went into action on the Somme in September, 1916, just on *two years* after Mr. Macfie introduced an almost identical general design to the Armoured Car Division and to the Admiralty.

THE CUSTOM OF THE COUNTRY.

The result is perhaps not very surprising, for the inventor or the designer, of a genuinely novel machine never makes as much money as those who make to his designs. One could not expect Mr. Macfie to be given a sum equal to the profits made by the firms who supplied the parts of the tanks which broke and left the gallant crews at the mercy of German guns. Nor could one expect him to receive a sum equal even to the profit on the paint with which the tanks were rendered conspicuous. But one might reasonably have expected that he would receive enough to set him up in a nice little business in this country, instead of merely a sum about equivalent to that which the Treasury would have expended if he had been tried and deported as an undesirable alien when he first landed in this country with the Tank scheme in his head.

TANKS AND AIRCRAFT.

The reason why one devotes space to this subject in THE AEROPLANE is that in future wars Tanks and aircraft will be very closely allied. Tanks with aeroplane reconnaissance will operate much as ships will operate with aeroplane scouts at sea.

Also, in 1915, long before Tanks ever went into action, this paper did its best, guardedly in print, and by private correspondence, to force those in authority to pay attention to this new weapon. But, as usual, all efforts failed to move the civilian experts in charge, though the active service soldiers were quick enough to see the value of the machine.

It may be of interest to note that Mr. Macfie's designs have always been a year or two in front of the official designs, until quite lately when some very able people have taken charge of Tank affairs, and have not disdained to treat Mr. Macfie as an engineer whose suggestions are worthy of consideration.

One suggests that the best use that Mr. Macfie can make of his paltry £500 is to go to Germany or America, where his latest designs for high-speed landships capable of standing up to gun fire are likely to be appreciated and useful.—C. G. G.

SPECIAL BRITISH AIRCRAFT CONSTRUCTORS' ISSUES.

The Paris Aero Show begins on December 19th. On December 17th THE AEROPLANE will publish the first of Three Special Issues devoted to the products of British Aircraft Constructors. These Special British Aircraft Constructors' issues will provide a complete review of the British Aircraft Industry while the French Aircraft Industry is enjoying the advantages of its Exhibition. Copies of these issues should be ordered in advance so as to assure delivery. If desired copies will be sent by post for 7d. from The Aeroplane Publishing Offices, 61, Carey Street, W.C.2.

M. HENRI DEUTSCH (DE LA MEURTHE).

There are men in life who, possessed of wealth and all things that tend to make existence happy, make no effort to achieve those great things which bring public fame, yet who quietly and unobtrusively give material and moral assistance to struggling science or impoverished art. Of these was M. Henri Deutsch (de la Meurthe) who died in Paris on Nov. 24th. Born in 1846 he became in early life a pioneer in the development of the oil industry in France. With his brother he controlled the great firm of A. Deutsch (de la Meurthe) and Sons, vegetable and mineral oil merchants. It was an unpoetic beginning.

He took a great personal interest in the development of the internal combustion engine and in 1899 he demonstrated to President Carnot at the Paris Exhibition a new oil-driven car. But his efforts were directed towards the general furtherance of motoring and aeronautics. He was a founder member both of the Automobile Club de France and the Aero Club de France—of which he became President in later years.

Not only did he finance early experimenters with airships and aeroplanes, but he gave large sums of money in prizes for specific feats in aeronautics. One prize of £4,000 was won by M. Santos-Dumont with his dirigible in 1901 by a flight from St. Cloud to the Eiffel Tower and back within a period of half an hour. Other prizes followed, including many specifically allotted to aviation. Often in these matters he worked in co-operation with M. Archdeacon, another patron of aeronautics.

He gave the money (500,000 francs) with which the Aero Technical Institute at St. Cyr was founded and he endowed a Chair of Aeronautics at the Conservatoire des Arts et Métiers.

To the country itself he has displayed direct generosity. In 1909 he presented an airship, "La Ville de Paris," which he had had constructed at his own expense, to the Government in replacement of the airship, "La Patrie," which had recently been destroyed.

In 1911 he was present in company with the Premier and many leading members of the Government at the start of the Paris-Madrid race and was injured in the accident which killed M. Berteaux, the Minister of War, and amputated the arm of M. Monis, the Premier.

Many of the great aeronautical firms in France owe their existence to the money of M. Deutsch. Not only had he the interest of a patron in the matter but he showed a close practical interest in aviation, flying as passenger in many aeroplanes created by firms with which he was connected. Many machines he purchased and so accumulated a greater private stable of aeroplanes than any, save M. de Mumm.

The Government of the French Republic showed appreciation of his services by appointing him a Commander of the Legion of Honour in 1911.

Not only was he interested in the somewhat mechanical art of aviation but he had a great knowledge of music. In this, again, he was a patron of discrimination and gave assistance to many artists whose sole crime was poverty. In company with the Prince of Monaco and the Comtesse Greffulhe he subsidised competitions to encourage composers whose talents had met little public recognition. Here again he had practical knowledge and had composed many pieces, including an opera, suitably entitled "Icare," which was produced in 1912 at the Opera, in Paris.

At Deauville in the past autumn he had an accident in a motor-boat which revived the old troubles consequent upon his injuries of 1911, and from this relapse he failed to recover.

France has suffered a great loss by his death, and the world of aeronautics is robbed of one of its most distinguished figures. Modesty, coupled with true enthusiasm, directed his career.—H. F.

THE FLIGHT TO AUSTRALIA COMPETITION.

THE VICKERS MACHINE.

The following telegram from Crete, dated Nov. 17th, was received on Nov. 25th :—

Left Rome yesterday morning 9 a.m.—landed Taranto 11.45.—Again low clouds—visibility bad.—Passed over Capua Naples then turned east over mountains. Flew low over Vesuvius, but weather too bad to photograph.—Very bumpy over mountains, machine falling several hundred feet at times.—Good wind helping us.—Greatest assistance afforded us Taranto by aerial route.—Spent afternoon on machine.—Suda Bay reported good so decided land there to avoid long sea stretch.—Left Taranto 8 to-day.—Arrived Suda 3.45.—Strong wind on our beam.—Low clouds, rain all way to South Greece.—Attempted get above clouds but too high so flew at 800 feet.—Following coast nearly hit small island in mist.—South Greece to Crete good weather, slight head wind.—Aerial route station here giving all assistance.—Hope Cairo to-morrow.—Crew fit.—Hoping better weather now much warmer.—(Signed) ROSS SMITH.

The following telegram from Cairo dated Nov. 18th was received on Nov. 24th :—

Left Suda Bay eight to-day.—Arrived Cairo 3.30.—Weather again bad.—Low clouds made crossing Crete mountains difficult.—Wind slightly favourable.—Steered South course after leaving, but had fly through rain at 2,000 feet most way across Mediterranean.—Passed two steamers half way, checked ground speed and drift on them.—Crossing took two and half hours.—Struck African coast Sollum, then flew east to Cairo across desert via Matruh and Wadinatrun.—Hope Damascus or Bagdad to-morrow.—All very pleased to have got here.—Hope for better weather now.—So far have taken thirty flying hours mostly through rain and storms.—Throughout greatest assistance rendered by aerial route stations.—Nothing being too much trouble.—Largely due their excellent organisation we here so soon.—Vimy going perfectly.—ROSS SMITH.

The machine was then reported to have reached Damascus on Nov. 19th.

The following telegram from Delhi dated Nov. 25th has been received :—

Ross Smith arrived Delhi, 4.15, 25th. Everything O.K. Proceeding Allahabad on 27th.

The Air Ministry announced on Dec. 1st that advice had been received from India that the Vickers-Vimy machine arrived at Allahabad at 5.0 p.m. on Nov. 27th, and left for Calcutta at 8.30 a.m. on the next day.

THE BLACKBURN MACHINE.

The Blackburn "Kangaroo" which left Hounslow on Nov. 21st left Romilly at 9.40 a.m. on Nov. 25th. St. Raphael was reached at 4 p.m. on Nov. 28th, and the machine left for Capua at 9.30 a.m. on the next day. The weather was fine but cloudy.

A message received from Italy stated that the "Kangaroo" landed at Pisa on Nov. 29th, where the pilot reported heavy wind and rain. On the next day the flight was resumed and the machine arrived at Rome at 4.45 p.m. They intended to fly on to Taranto on Dec. 1st.

BRITISH AIRCRAFT COMPETITIONS, 1920.

The Air Ministry announced on Nov. 28th :—

Owing to the representations made by British Aircraft Manufacturers, the Air Ministry has decided to alter the date of the commencement of the Small Type Aeroplane Competition to June 1st, 1920. Entries for this competition will, therefore, not close until Feb. 1st, 1920. The dates already announced in connection with the other two competitions will remain the same.

Both of the aeroplane competitions will take place at the Aeroplane Experimental Station at Martlesham Heath, near Woodbridge, Suffolk.

The Seaplane (Amphibian) Competition will take place at Felixstowe, with the exception of the tests for landing upon and rising off the ground for this class which will be held at Martlesham.

THE BLACKBURN "KANGAROO."—The machine being tested before leaving Hounslow.

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NAVAL & MILITARY AERONAUTICS

[The official "Gazettes" and Personal Notices will be found on p. 1878.]

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, Nov. 26th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Order into which they have been admitted :—

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE (MILITARY DIVISION).—Commander.—Lt.-Col. Alexander Reiss, R.A.F.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Officers.—Military Division.—Maj. Thomas Baxenden, R.A.F.; Maj. Alban Ellerton, R.A.F.; Maj. Albert Levick, R.A.F.; Maj. William Michie, R.A.F.; Maj. George Stevens, R.A.F; and Sqdn. Leader George Williamson, R.A.F.

Members.—Military Division.—Capt. the Hon. Edward Knollys, Lond. R., attd. R.A.F. (also received the Distinguished Flying Cross); Mrs. Florence Day, W.R.A.F.

The King then conferred decorations as follows :—

THE MILITARY CROSS AND BAR.—Capt. Erskine Lindop, Indian Army, attd. R.A.F.

THE DISTINGUISHED FLYING CROSS AND BAR.—Lt. Horace Young, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Capt. Robert Caley, R.A.F.; Capt. William Carrothers, R.A.F.; Capt. Thomas Dickinson, 16th Cavalry, Indian Army, attd. R.A.F.; Flt. Lt. Bernard Cross, R.A.F.; Flt. Lt. Grahame Donald, R.A.F.; Flt. Lt. Eric Donaldson, R.A.F.; Flt. Lt. Cecil Fawssett, R.A.F.; Capt. Alan Hill, R.A.F.; Lt. Victor Beechcroft, R.A.F.; Lt. Oliver Cassels, R.A.F.; Flying Officer Thomas Coates, R.A.F.; Flying Officer James Craig, R.A.F.; Flying Officer Charles Findlay, R.A.F.; Lt. Spencer Ford, R.A.F.; Lt. Horace Hern, R.A.F.; Flying Officer Oscar Heron, R.A.F.; Flying Officer Walter Simon, R.A.F.; Sec. Lt. William Dollery, R.A.F.; and Sec. Lt. Norman Frome, R.A.F.

THE AIR FORCE CROSS.—Wing Comdr. Sydney Harris, R.A.F.; Sqdn. Leader John Graham, R.A.F.; Sqdn. Leader Irving Hartford, R.A.F.; Flt. Lt. Robert Hughes-Chamberlain, R.A.F.; Flt. Lt. Edward Davis, R.A.F.; Flt. Lt. Ronald Dean, R.A.F.; Capt. Norman Dimmock, R.A.F.; Capt. Alfred Gilligan, R.A.F.; Capt. John Gotch, R.A.F.; Flt. Lt. Geoffrey Hall, R.A.F.; Flt. Lt. Frederick Hartridge, R.A.F.; Flt. Lt. Harold Hemming, R.A.F.; Flying Officer Ralph Dixon, R.A.F.; Flying Officer Charles Hatcher, R.A.F.; Flying Officer Reginald Houghton, R.A.F.; and Lt. Charles Hyde, R.A.F.

The following had the honour of being received by His Majesty, when the King handed to him, as "Next-of-Kin," the decorations won by his relative in the War :—

THE VICTORIA CROSS, THE DISTINGUISHED SERVICE ORDER AND TWO BARS, AND THE MILITARY CROSS AND BAR.—Mr. MANNOCK : Awarded to his son, the late Maj. Edward Mannock, R.A.F.—On June 17th, 1918, Maj. Mannock attacked a Halberstadt machine near Armentières and destroyed it from a height of 8,000 ft. On July 7th, 1918, near Doulieu, he attacked and destroyed one Fokker (red-bodied) machine, which went vertically into the ground from a height of 1,500 ft. Shortly afterwards he ascended 1,000 ft. and attacked another Fokker biplane, firing 60 rounds into it, which produced an immediate spin, resulting, it is believed, in a crash. On July 14th, 1918, near Merville, he attacked and crashed a Fokker from 7,000 ft. and brought a two-seater down damaged. On July 18th, 1918, near Merville, he fired 80 rounds into an Albatros two-seater, which went to the ground in flames. On July 20th, 1918, east of La Bassée, he attacked and crashed an enemy two-seater from a height of 10,000 ft. About an hour afterwards he attacked at 8,000 ft. a Fokker biplane, near Steenwercke, and drove it down out of control, emitting smoke. On July 22nd, 1918, near Armentières, he destroyed an enemy triplane from a height of 10,000 ft. Maj. Mannock was awarded the under-mentioned distinctions for his previous combats in the air in France and Flanders :—Military Cross. Gazetted, Sept. 17th, 1917. Bar to Military Cross. Gazetted, Oct. 18th, 1917. Distinguished Service Order. Gazetted, Sept. 16th, 1918. Bar to Distinguished Service Order (1st). Gazetted, Sept. 16th, 1918. Bar to Distinguished Service Order (2nd). Gazetted, Aug. 3rd, 1918. This highly distinguished officer, during the whole of his career in the R.A.F., was an outstanding example of fearless courage, remarkable skill, devotion to duty, and self-sacrifice, which has never been surpassed. The total number of machines definitely accounted for by Maj. Mannock up to the date of his death in France (July 26th, 1918) is 50—that total specified in the "Gazette" of Aug. 3rd, 1918, was incorrectly given as 48, instead of 41.

BUCKINGHAM PALACE, Nov. 27th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

His Majesty decorated the following with the Victoria Cross :—

Flying Officer Andrew Beauchamp-Proctor, R.A.F. (also received the Distinguished Service Order and the Distinguished Flying Cross).—Between Aug. 8th, 1918, and Oct. 8th, 1918, this officer proved himself victor in 26 decisive combats, destroying 12 enemy kite balloons, 10 enemy aircraft, and driving down four other enemy aircraft completely out of control. Between Oct. 1st, 1918, and Oct. 5th, 1918, he destroyed two enemy scouts, burnt three enemy kite balloons, and drove down one enemy scout completely out of control. On Oct. 1st, 1918, in a general engagement with about 28 machines, he crashed one Fokker biplane near Fontaine and a second near Ramicourt; on Oct. 2nd he burnt a hostile balloon near Selvigny; on Oct. 3rd he drove down, completely out of control, an enemy scout near Mont d'Origny, and burnt a hostile balloon; on Oct. 5th, the third hostile balloon near Bohain. On Oct. 8th, 1918, while flying home at a low altitude, after destroying an enemy two-seater near Maretz, he was painfully wounded in the arm by machine-gun fire, but, continuing, he landed safely at his aerodrome, and after making his report was admitted to hospital. In all he has proved himself conqueror over 54 foes, destroying 22 enemy machines, 16 enemy kite balloons, and driving down 16 enemy aircraft completely out of control. Capt. Beauchamp-Proctor's work in attacking enemy troops on the ground and in reconnaissance during the withdrawal following on the battle of St. Quentin from March 21st, 1918, and during the victorious advance of our Armies commencing on Aug. 8th, has been almost unsurpassed in its brilliancy, and as such has made an impression on those serving in his squadron and those around him that will not be easily forgotten. Capt. Beauchamp-Proctor was awarded Military Cross on June 22nd, 1918; Distinguished Flying Cross on July 2nd, 1918; Bar to Military Cross on Sept. 16th, 1918; and Distinguished Service Order on Nov. 2nd, 1918.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

THE MOST DISTINGUISHED ORDER OF SAINT MICHAEL AND SAINT GEORGE.—Companions.—Air Commodore Charles Longcroft, R.A.F. (also received the Air Force Cross); Wing Comdr. Arthur Godman, R.A.F.; Wing Comdr. Felton Holt, R.A.F.; Wing Comdr. Roland Hunt, R.A.F

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.

Member.—Military Division.—Lt. Joseph Andrews, R.A.F.

His Majesty then conferred decorations as follows :—

THE MILITARY CROSS, THE DISTINGUISHED FLYING CROSS, AND THE AIR FORCE CROSS.—Flt Lt. Gerald Maxwell, R.A.F.

THE MILITARY CROSS AND THE DISTINGUISHED FLYING CROSS.—Lt. George Gibbons, R.A.F.

THE MILITARY CROSS AND THE AIR FORCE CROSS.—Flt. Lt. Thomas Martyn, R.A.F.

THE DISTINGUISHED FLYING CROSS AND BAR.—Flying Officer John Griffith, R.A.F., and Flying Officer William Harvey, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Capt. Joseph Hallonquist, R.A.F.; Capt. Claud Morley, R.A.F.; Lt. Victor Dreschfeld, R.A.F.; Flying Officer William Green, R.A.F.; Lt. Gerald Griffin, R.A.F.; Lt. Philip Holligan, R.A.F.; Flying Officer James Holmes, R.A.F.; Flying Officer John Mayer, R.A.F.; Lt. Allan McGregor, R.A.F.; Lt. Bernard Porter, R.A.F.; and Lt. James Young, R.A.F.

THE AIR FORCE CROSS.—Flt. Lt. Herbert Irwin, R.A.F.; Flt. Lt. Neville Kemsley, R.A.F.; Flt. Lt. Frederick Lander, R.A.F.; Capt. Edward Landon, R.A.F.; Capt. James Line, R.A.F.; Capt. Peter Martin, R.A.F.; Flt. Lt. Angus McColl, R.A.F.; Flt. Lt. Cedric McDonald, R.A.F.; Flt. Lt. Denis Mulholland, R.A.F.; Flying Officer John Jennings, R.A.F.; Flying Officer John Lawson, R.A.F.; Flying Officer William Leete, R.A.F.; Flying Officer Harold Lydford, R.A.F.; Lt. Ivor McIntyre, R.A.F.; and Flying Officer Arthur Moody, R.A.F.

* * *

The following is extracted from the "Court Circular" of Dec. 1st :—

"The Prince of Wales arrived at Portsmouth on board H.M.S. 'Renown' (Capt. Ernest Taylor, R.N.) on his return from Canada and the United States of America. . . .

"The Prince of Wales was received on landing by the Prince Albert and . . . the Air Officer Commanding, Coastal Area. . . .

"The Prince of Wales, accompanied by the Prince Albert, with the Staff in attendance, travelled by special train on the London, Brighton, and South Coast Railway to Victoria Railway Station. . . .

"There were also present at the Railway Station . . . representatives of the Royal Navy, the Army, and the Royal Air Force. . . ."

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made :—

Nov. 25th.—Lt. C. R. Price, to "Pegasus," on recommg., Nov. 24th.
Sub-Lt.—E. T. Young, to "Pegasus," on recommg.
Mate.—T. Culliford, to "Pegasus," on recommg.
Nov. 27th.—Lt.—H. A. Taylor, to "Pegasus."
Payr. Commr.—H. E. Symons, O.B.E., to "Ark Royal," Jan. 1st.

H.M.S. "PEGASUS."

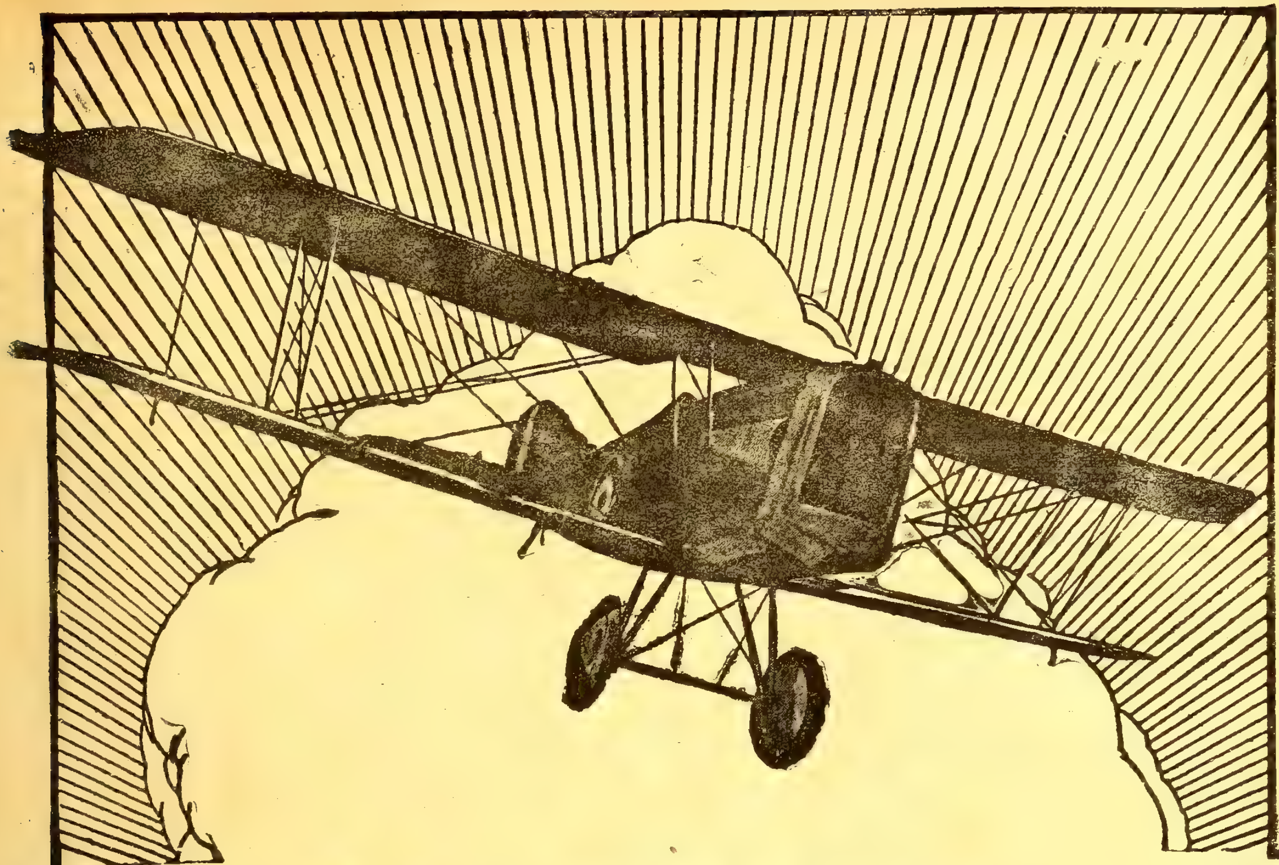
The following particulars are to hand concerning the aircraft-carrier "Pegasus." Built during the war, she was given the name of the light cruiser which was sunk by "Konigsberg" while at anchor at Zanzibar repairing her machinery. "Pegasus" joined the Grand Fleet after the Battle of Jutland, and last April was allocated for duty with the new Atlantic Fleet. She was recently sent away on detached service under Commander Oliver Stokes, D.S.O., R.N.

IN THE PRIZE COURT.

Mr. Wilfred Lewis, who appeared on behalf of the claimants, read, on Nov. 25th in the Prize Court before the President the Rt. Hon. Sir Henry Duke, an affidavit by Capt. Charles Edward Stafford Lusk, who said that he was senior surviving officer of His Majesty's seaplane 8,695, which on Sept. 22nd, 1917, was operating under the directions of the Admiralty and was then under the command of Flight Lieut. Norman Ausley Magor, who was killed in action on April 25th, 1918. When they were over the North Sea the crew of the seaplane saw an enemy submarine, which was believed to be the U.C.72. Bombs were dropped and one destroyed the submarine, with her crew of 32 hands.

The President granted a declaration that the bounty payable was £160 for the U.C.72.

Solicitors.—Messrs. A. Tyler and Co. (instructed by Messrs. Stilwell and Sons, Navy and Prize Agents) for the claimants; the Treasury Solicitor for the Procurator-General.



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300 H.P. HISPANO-SUIZA ENGINE.

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MILITARY.

THE CASUALTY LIST.

Reported on Nov. 28th.

Previously Reported Missing, now Reported Killed.—RAPER, Sec. Lt. S. E., Seaf. Highrs, attd. R.F.C.

Reported on Dec. 2nd.

Previously Reported Missing, now Reported Killed.—Ellis, Lt. P. C., High. L.I., attd. R.F.C.
Sage, Sec. Lt. D. M., R.F.C.
Streather, Lt. E. H. P., R.F.C.

THE WAR IN AFGHANISTAN.

A good deal of damage has been done by the air raids over the Mahsud territory. Up to Nov. 19th the casualties amounted to a hundred dead. Among the killed at Kamicuram, the chief town, was the son of the Chief of the Bahdozai. Over five tons of bombs have been dropped by twenty-five aeroplanes.

A Bristol Fighter recently made a bad landing near Datta Khel. The occupants were unhurt.

Reuter telegrams from India dated Nov. 28th show that the frontier situation is improving. In view of the peace feelers put out, it is proposed to inform the Mahsud Maliks that if they really are considering the acceptance of the terms the bombing of the local jirgah will be suspended for 24 hours.

AIR FORCE.

UNDER MILITARY LAW.

An Order of the Army Council and the Air Council issued recently provides that officers and airmen of the Royal Air Force acting with the military forces under or within the Command of the General Officer Commanding-in-Chief the British Army of the Rhine shall in all respects be subject to the Army Act while on active service as if they were officers and airmen attached to the Army.

THE RE-OPENING OF RECRUITING FOR THE R.A.F.

The Air Ministry announced on Nov. 28th :—

Owing to the large number of men who are due for discharge on the completion of their engagements, recruiting for the R.A.F. has now been re-opened, and there are vacancies for skilled mechanics of various trades.

Engagements are for four, six or eight years with the colours, with eight, six or four years respectively with the reserve.

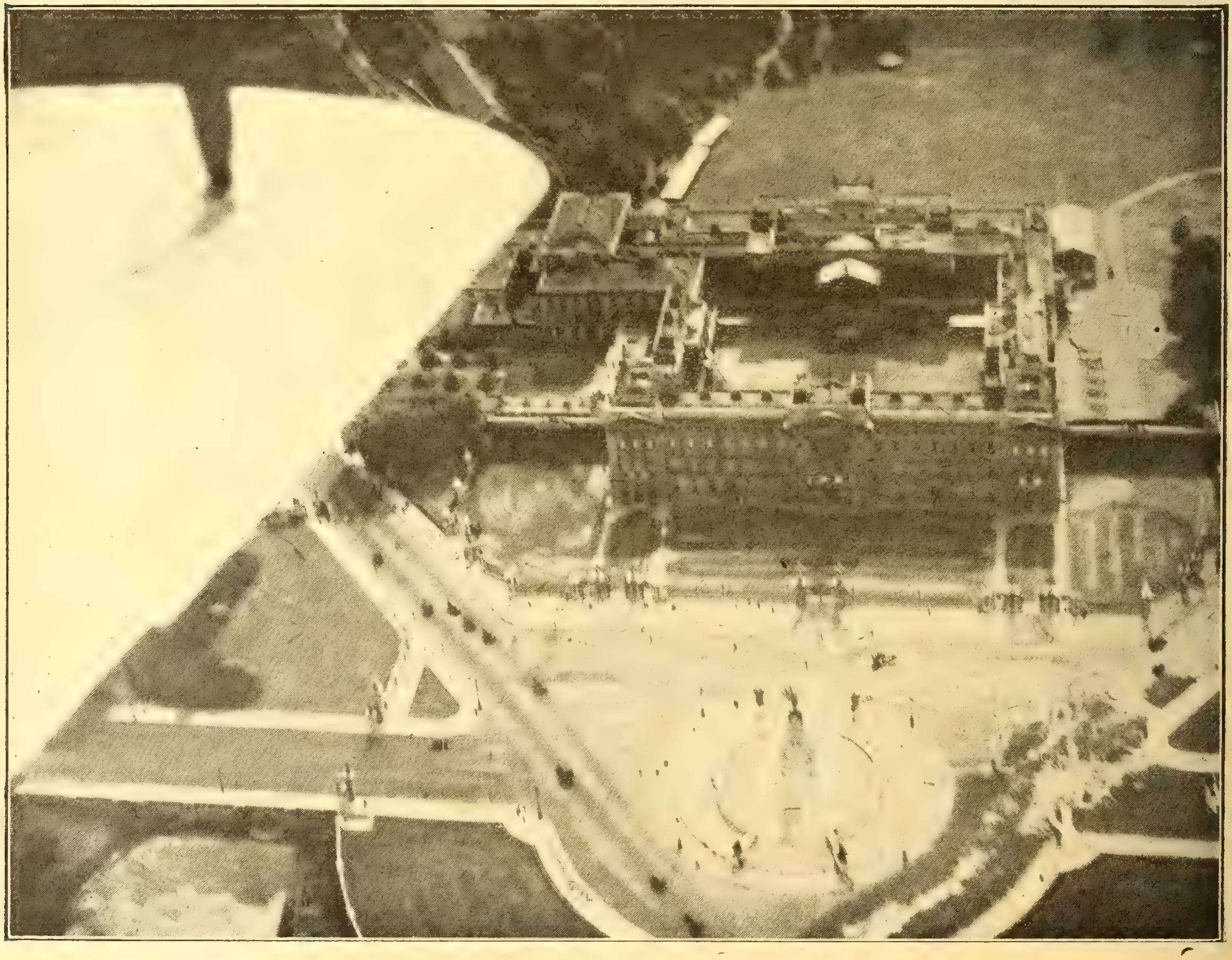
In view of the newly revised rates of pay of the Force the openings are distinctly attractive, particularly as men will be working at their own trades and constantly gaining fresh experience which will be of great value to them on their return to civil life, by which time, in all probability, there will be a greatly increased demand for aircraft workers of all categories.

Skilled aircraft workers who are at present unemployed, if those who are not employed in their own trades would, therefore, be well advised to consider the possibilities of the careers offered by the Service.

Full details as to pay, etc., may be obtained from 4, Henrietta Street, London, W.C., or from any R.A.F. Station.

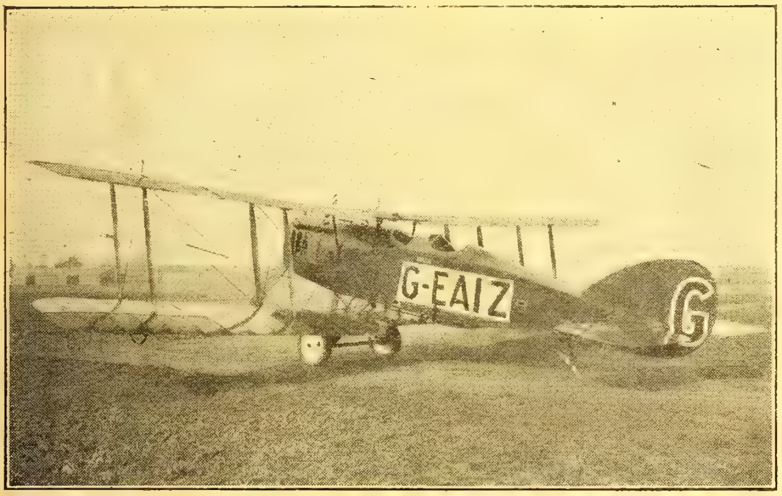
"DEFICIENCIES."

Demobilisation and reductions in establishments always produce trouble and dissatisfaction. It is unavoidable under the conditions governing these matters. But there are certain grievances requiring redress. One of these is the liability of commanding officers for the deficiencies in the accounts and stores of their units. In ordinary times, and under ordinary conditions, it is proper that commanding officers should be held liable for losses and omissions, which presumably would not have happened had their powers of command been exercised with due efficiency. But of recent months Air Force units in course of dissolution have changed their commanding officers with great rapidity, and it has become increasingly difficult to allocate the blame for deficiencies. Each new commanding officer has had to take over from his predecessor in order that the unit might be closed down and the accounts have frequently been in inextricable confusion, with the result that the last C.O. has had to pay large sums of money when the closing down has been completed. It is hard that he should have to pay for the carelessness or inefficiency of those who went before. Would it not be possible to "write off" these deficiencies when it is found impossible to discover who was originally



An aerial photograph of Buckingham Palace taken from an Airco Biplane.

The "Bristol" Aeroplanes



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The "BRISTOL" Tourer has proved a great success as a high-speed carrier of passengers or cargo, whilst the "BRISTOL" construction is in itself the highest guarantee of dependability, economy of upkeep and length of service.

Dual controls are normally fitted, though the machine can be supplied with pilot's controls only. Either 275 h.p. Rolls-Royce Falcon III engine or 230/240 Siddeley Puma engine can be fitted. The main specifications are;—

Weight Empty - - - -	1750 lbs.
Weight Loaded - - - -	2800 lbs.
Wing Span - - - -	39 ft. 3 in.
Wing Area - - - -	405 sq ft.
Wing Loading - - - -	6.92 lbs. per sq.ft.
Maximum Height - - -	10 ft. 1 in.
Overall Length - - - -	25 ft. 9 in.
Petrol Capacity - - - -	70 gals.
Best Speed - - - - -	125 m.p.h.
Cruising Speed - - - -	90 m.p.h.
Range - - - - - -	560 miles.

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responsible for the losses? It is customary in the Army to "write off" losses when the elements of fraud or criminal negligence are absent. Why should not the Air Force adopt a similar procedure?

An Egyptian Incident.

On Nov. 22nd an aeroplane while flying over Cairo fell upon a private house in Abdin Square, thereby stopping a demonstration which was to have been held there. The top storey was badly damaged, but one of the aviators escaped unhurt, and the other was only slightly injured.

Major McCudden's Will.

Major James Thomas Byford McCudden, V.C., D.S.O., M.C., M.M., R.F.C., of Burton Road, Kingston-on-Thames, who was accidentally killed in France on July 9th, 1918, left an estate valued at £266 14s. 3d. As he died intestate and a bachelor, letters of administration have been granted to his father, Mr. William Henry McCudden, retired warrant officer, Royal Engineers, as next of kin.

Rugby Football.

On Nov. 26th the R.A.F. played against the United Services at Richmond, the result being 34 points to nil. A victory for the United Services.

This match again showed that the United Services are much too strong a side for the R.A.F. team, who played one man short throughout and two men short in the second half.

The Air Force seem to get together no better and are still very scratch. The forwards playing so short put up a very good fight under the circumstances. The United Services played very good football in the second half, the backs handling the ball accurately and running well. In the first half they were not so good, and missed chances.

R.A.F. Team:—Flying Officer Damant, full back; Flying Officer Wagner, Sqdn. Ldr. Neale, M.C., Flt. Lieut. Thomas, D.F.C., Sqdn. Ldr. Penny, threequarter backs; Sqdn. Ldr. Smart, Sqdn. Ldr. Pulford, half backs; F. Os. Maxwell, Wakefield, Rose, Flt. Lieuts. Simpson, Munday, Scroggs and Lees, forwards.

BRAZIL.

Military Organisation.

The military aeronautical programme now in course of fulfilment arranges for the creation during this year of three escadrilles of ten aeroplanes, and allocated respectively for fighting, bombing, and observation. In 1920 another eight escadrilles are being formed—four for observation, two for fighting and two for bombing.

A French military mission has organised a school of aviation near Rio de Janeiro, which was opened officially last July. Good workshops are already in existence and there are 30 school aeroplanes.

An officer is being sent to Europe to study the latest methods of aerial photography and its connection with cartography.

HOLLAND.

On Nov. 24th Lts. Land and Van Dyk, of the Royal Netherlands Flying Corps, were killed at Soesterberg while flying a Rumpler biplane, owing to the machine catching fire in the air.

Mr. Land was preparing for a flight from Holland *via* India to the Dutch East Indies. His death will be deeply regretted by all who knew him. He visited England recently and achieved remarkable popularity in the short time which he spent in this country. Also he was a frequent visitor to the E.L.T.A. Show at Amsterdam, where he met and made friends with many British aviators.

As a pilot he was very skilful and capable, flying always with care and good judgment, and he was eminently fitted for the great flight to the East which he had undertaken. He married recently an English lady who left Germany during the war. To her all Mr. Land's friends will offer their deep sympathy in her great sorrow.—C. G. G.

FRANCE.

A squadron of aeroplanes recently left St. Raphael for Dakar. The squadron is destined for an aviation centre in Senegal.

ITALY.

The Italian correspondent of The Aeroplane writes:—

The "Official Gazette" gives the following as the peacetime establishment of the Italian Aeronautical Corps:—

An Inspector of Aeronautics.
A Brigade of Chaser Aeroplanes.
A Brigade of Reconnaissance Aeroplanes
Two "Groups" of Balloonists.
One "Group" of Dirigibilists.
One Training Command.
A Head of the Armament Department.

Three hundred and ninety officers are to remain in the Aeronautical Corps under the command of a Major or Brigade-General.

Post-War News.

Now that the depression of the armistice is wearing off, I find that in one of my "hushed to sleep" brain-cells there are numerous records of the Great War activity of the Ponte S. Pietro flying camp, the nearest Military flying centre to my part of the world.

A fleet of brigantines is reported as being fitted with subsidiary aero-engines for use in calm weather and in harbour. Here is something better than the scrap heap for old war horse-power.

The Italian technical papers continue to sound a loud note of alarm about the Huns hiding their best 'planes. Certainly, of the 100 or so German booty machines at Monte Celio, none are of late type.

One awaits more about the S.I.A.I. 1,200 h.p. with four engines and central boat, building at Sesto Calende.—T. S. H.

PERSIA.

It is understood that British aeroplanes are assisting in the restoration of order to the Urumiah-Tabriz region.

RUSSIA.

According to the "Morning Post" correspondent a Bolshevik balloon recently landed at Nykyrka, Finland. The occupant of this stated that the garrison of Krasnaya Gorka at present consists of 1,500 men. At Kronstadt there is such a serious scarcity of fuel that the population have begun to break up the wooden quays for firing. All the food supplies are exhausted.

U.S.A.

An Appropriation for Army Aviation.

An additional appropriation has been unanimously voted by the Military Committee for Army Aircraft Construction. The amount is $15,000,000 (normally £3,000,000) and it is allocated in order to cover the additional charges incidental on the establishment of aerial routes (military) to Panama, Alaska, and possibly Asia. The plans of these routes were outlined to the Committee by Secretary Baker and Brig.-Gen. William Mitchell, Director of Military Aeronautics.

The total appropriation for construction is now £8,000,000. With this sum it is proposed to build 200 pursuit, 200 bombing, and 200 experimental pursuit aeroplanes. In the bombing machines 300-h.p. Hispano-Suiza engines will be fitted, and in the remainder Liberty engines will be used. Over 12,000 of the latter are available.

NEW BRITISH RECORDS.

On Nov. 15th an Airco D.H.9R biplane, fitted with a 450-h.p. Napier engine, and piloted by Capt. G. W. Gathergood, secured the following 18 official British records, certified by the Royal Aero Club.

Distance in a Given Time—Closed Circuit.

Time Hours.	Distance		Kilometres per Hour.	Miles per Hour.
	Kiloms.	Miles.		
¼	57.09	35.47	228.36	141.89
½	115.35	71.67	230.70	143.35
1	232.57	144.51	232.57	144.51
2	403.13	250.49	201.56	125.24

Greatest Speed—Straight Flight.

Distance. Kiloms.	Time.			Kilometres per Hour.	Miles per Hour.
	Hr.	Min.	Sec.		
5	0	1	14.85	240.48	149.43

Speed—Closed Circuit without Alighting.

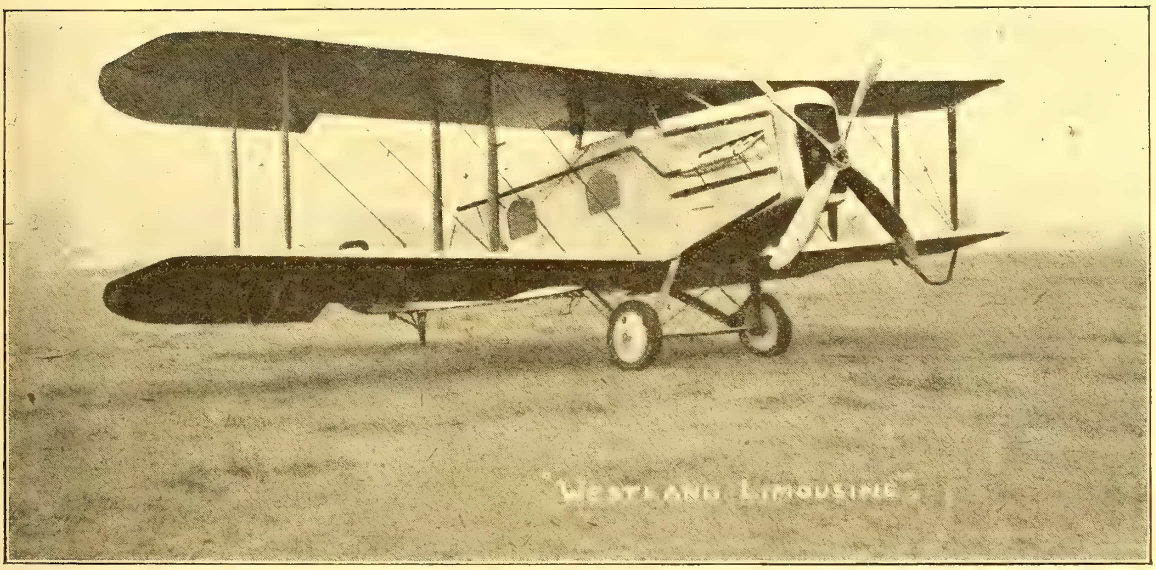
Distance. Kiloms.	Time.			Kilometres per Hour.	Miles per Hour.
	Hr.	Min.	Sec.		
5	0	1	24 1/5	213.77	132.84
10	0	2	36 1/5	230.47	143.21
20	0	5	25 1/5	221.40	137.57
30	0	8	13 1/5	218.97	136.07
40	0	11	1	217.85	135.37
50	0	13	9 3/5	227.96	141.65
100	0	26	7 4/5	229.62	142.68
150	0	38	44	232.35	144.38
200	0	51	37 1/5	232.47	144.45
250	1	4	29	232.61	144.54
300	1	17	11	233.21	144.91
350	1	29	50 4/5	233.72	145.23
400	1	42	32	234.07	145.44

A SUCCESSFUL CLUB.

It is stated in the "Aircraft Journal" of Sept. 20th that the Aviators' Club of Pennsylvania had only been formed one month. In that time 300 former Army, Navy, and Marine aviators had joined. At a recent meeting it was decided that they would not merge with the Aero Club of Pennsylvania.

Arrangements are being made to obtain several aeroplanes and to place them at the disposal of the members of the club. Pilots only are accepted as active members.

WESTLAND



If you are visiting the Paris Aeronautical Exhibition we shall be pleased to show you the Westland "Limousine" on Stand 20.

We shall also have another machine at Le Bourget Aerodrome for giving demonstration flights.

Above is illustrated the model we intend to exhibit. The first machine, which has been flying since last July, has proved an ideal machine for mail carrying or passenger transport-de-luxe.

For full particulars and arrangements as to trial flights apply to our London Representative, **Lieut.-Colonel C. H. MEARES,** c/o MESSRS. PETTERS LIMITED, 6, DEAN'S YARD, WESTMINSTER, LONDON, S.W.1.

WESTLAND AIRCRAFT WORKS

(Branch of Petters Limited)

YEOVIL.

Telephone:
141 and 142 YEOVIL.

Telegrams:
AIRCRAFT, YEOVIL.

COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

CIVIL AERODROMES.

The Air Ministry announced on Nov. 22nd that the following lists of aerodromes are issued as an addition to or amendment of the lists already published.

List A.—Service Stations only available for Civil use in emergency.

Amendments.

The following aerodromes have been transferred to List E, and are now published in that list:—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Tangmere	Drayton	Chichester
Tresco (S)	Penzance	St. Marys

Reference: (S) seaplane station.

List C.—Aerodromes temporarily retained for Service Purposes.

Amendments.

The following aerodromes have been transferred to List E, and are now published in that list:—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Collinstown	Portmarnock	Dublin
Crail	Crail	Crail
Ford Junction	Ford Junction	Arundel
Gullane	Gullane	North Berwick
Helperby	Brafferton	Ripon
Lincoln	Lincoln	Lincoln
Port Meadow (Oxford)	Oxford	Oxford
Tadcaster	Thorrer	Tadcaster
Throwley	Charing	Faversham
Upper Heyford	Lower Heyford	Bicester
Whitley Abbey	Coventry	Coventry
Witney	Witney	Oxford

List D.—Aerodromes licensed as "Suitable for Avro (504 K) and similar types of Aircraft" only. Except in very few instances, accommodation does not exist. The licences have also in the majority of cases been issued for limited periods only.

Aerodrome.	Location of Aerodrome.	Nearest Large Town.
Ipswich	Priory Heath	Ipswich
Kidderminster	Somerleyton Avenue	Kidderminster
West Timperley	Lies to N.W. of Timperley	Altrincham

List E.—Stations no longer in use by the R.A.F. These stations have been passed to the Government Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing-grounds in the immediate neighbourhood.

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Anglesey (A)	Llangefni	Holyhead
Collinstown	Portmarnock	Dublin
Crail	Crail	Crail
Ford Junction	Ford Junction	Arundel
Gullane	Gullane	North Berwick
Helperby	Brafferton	Ripon
Hythe	Hythe	Hythe
Lincoln	Lincoln	Lincoln
Port Meadow (Oxford)	Oxford	Oxford
Tadcaster	Thorrer	Tadcaster
Tangmere	Drayton	Chichester
Throwley	Charing	Faversham
Tresco (S)	Penzance	St. Marys
Upper Heyford	Lower Heyford	Bicester
Whitley Abbey	Coventry	Coventry
Witney	Witney	Oxford

References: (A) airship station; (S) seaplane station.

THE CONTINENTAL AIR SERVICES.

The Airco Service.

The weather during the past week ended Nov. 29th has been consistently unfavourable for flying, although only three of the scheduled flights had to be abandoned.

Aircraft Transport and Travel, Ltd., have now completed fourteen weeks' flying on the London-Paris service as follows:—Flights scheduled, 213; flights accomplished, 177; prevented by weather, 19; interrupted by weather, 12; interrupted by mechanical defects, 5; number of miles flown, 48,090; average speed (m.p.h.), 104.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass
Nov 24th	D.H. 4a	Lt. McMullin	12 45 p.m.	3.10 p m.			Ma
	D.H. 16	Lt. Lindley			12 30 p.m.	3 00 p.m.	2 and Mail
Nov 25th	D.H. 16	Lt. Powell	12.45 p.m.	2.55 p.m.			3 and Mail
	D H. 9	Lt Bradley			12.30 p.m.	2.50 p.m.	1
	Breguet				—	3 50 p.m.	Mail
Nov. 26th	D.H. 16	Capt. Baylis	12.45 p.m.	2.55 p.m.			2
	D.H. 4a	Lt. Tebbit	12.50 p.m.	3.00 p.m.			1 and Mail
Nov. 27th	D.H. 4a	Lt. Powell			12.30 p.m.	Both landed at Penshurst (Kent) owing to fog	2
	D.H. 16	Lt. McMullin			12.30 p.m		3 and Mail
Nov. 28th	D.H. 16	Capt. Baylis	Thick fog		12.30 p.m.	Landed Lympne	1 and Mail
Nov 29th	D.H 4a	Lt. Lawford	12.30 p.m.	Landed Wimereaux	Carbur	ettertrouble	2 and Mail
	D.H. 9	Lt. Robins	12.40 p.m.	3 30 p.m.			1 mechanic
	Breguet				—	3.30 p.m.	Mail

An improved wireless telephone installation is to be placed on the roof of the seven-storey building in Westminster, which is now the headquarters of the Aircraft Transport and Travel Company. Wireless telephones will also be fitted in the aeroplanes, and it will be possible to receive messages from pilots while they are actually in flight between London and Paris.

The regular operation of a wireless telephone service, not only between aeroplanes and terminal points, but also between aeroplanes and alighting grounds, will enable the flight of machines between London and the Continent to be signalled stage by stage as is the progress of a train. In the head offices of the company in London will be installed a special map of the Continental routes, with small model aeroplanes attached to it; and mechanism will be provided whereby the position of these aeroplanes can be changed from hour to hour, by the wireless operator on the roof, according to the messages he receives from aircraft in flight and from land stations. Thus it will be possible, at any time, to see at a glance the position of the aeroplanes which are actually in flight.

The Handley Page Services.

Despite fog, rain, and snow, 154 passengers and 19,990 lb. of goods were carried during November on the London-Paris and Brussels air services. The number of flights made in the best previous month was beaten by four.

London-Paris.—Nov. 24th, four passengers and 510 lbs. of freight were carried.

Nov. 25th, six passengers and 400 lbs. of clothing were carried.

During the week ending Nov. 26th, fifteen passengers and 1,342 lbs. of freight, including Christmas cards to Paris, were carried.

Nov. 28th, Lieut. Blake flew from Paris to London with passengers and freight. Fog was encountered along the entire route.

THE AIRCRAFT MANUFACTURING COMPANY LIMITED

AIRCO

HENDON, LONDON, N.W. 9.

Chairman and Founder (1911): G. HOLT THOMAS

The Largest Aircraft Enterprise in the World

THE Aircraft Manufacturing Company, which with its associated Companies, is the largest aircraft enterprise in the world, is in a unique position to undertake the construction and complete equipment of aircraft for every kind of commercial, scientific and administrative purpose.

While many firms are dependent upon outside industries for essential parts of their output, the vast Airco resources and experience enable the associated companies to carry out practically every phase of modern aircraft construction in their own works and under their own skilled supervision. The importance of this fact will be appreciated by those responsible for the inauguration and development of public air services.

Among the highly specialised products of the associated Companies are:

HIGH-SPEED AEROPLANES, AIRSHIPS AND KITE BALLOONS, SEAPLANES AND FLYING BOATS, AERO-ENGINES, PROPELLERS, INSTRUMENTS OF PRECISION, etc., etc.

THE AIRCRAFT MANUFACTURING CO., LIMITED.

AIRSHIPS LIMITED. GNOME & LE RHONE ENGINE CO, (Peter Hooker, Ltd.),
MAY, HARDEN & MAY, Seaplane Base, HYTHE. INTEGRAL PROPELLER COMPANY, LTD.

London Offices: 25-27, OLD QUEEN STREET, LONDON, S.W.1.

Dressmakers, costumiers, and furriers frequently fly on the Continental air service with cargoes consisting of women's dress, which is carried in large quantities.

[Which seems a lamentable use for a service destined to higher purposes.—Ed.]

LONDON-BRUSSELS.—Nov 24th, two Handley Page biplanes flew side by side to Brussels, carrying 2,807 lbs. of clothing for Belgium.

Nov. 25th, two machines flew together from Brussels to Hounslow with cargoes of raincoats, boots and furs. The journey was made in four hours.

During the week ending Nov. 26th, twenty-two passengers and 5,094 lbs. of freight were carried.

There is an increasing demand for the conveyance of goods to Belgium by air, owing to the fact that by steamer or rail delivery takes three weeks, whilst by air the journey is accomplished in three or four hours. Over 10,000 lbs. of velvet, dress material, and bales of wool have been carried by air to the Belgian capital during the last fourteen days. To hasten delivery, Handley Page machines have been flying to and from Brussels in pairs, which is the first stage of a future scheme to run daily formations of commercial aeroplanes to carry freight and passengers on the Continental Air Services.

BOURNEMOUTH.

The Avro Air Carnival at Bournemouth, announced for Nov. 29th and 30th, has been postponed until Dec. 6th and 7th.

BROOKLANDS.

A correspondent writes :—

It is reported, on good authority, that the Sopwith Schneider Cup machine, fitted with a land under-carriage, has flown here at over 170 m.p.h.

It is said that the "Vimy" commercial machines which Vickers, Ltd., are constructing here for China, are being elaborately finished and fitted up, even to expensive silk curtains for the side windows in the fuselage.—J. F. S.

GLASGOW.

The British Science and Key Industries Exhibition of Glasgow made arrangements with the West of Scotland Aviation Co. for an aviation "spectacle" to be given on Nov. 29th. Capt. Reeve, of the company, whose headquarters are at Renfrew was to fly over the exhibition buildings and give a display of "stunt" flying. Tickets were to be dropped from the machine entitling the recipients to free admission to the exhibition, and others were to be dropped giving a present of £1 in addition to free entrance.

LONDON.

CRICKLEWOOD.—Handley Page Transport, Ltd., from the inauguration of civil flying on May 1st to Nov. 20th have carried 3,895 passengers and 27,465 lb. of freight. The total mileage flown was 50,150. This flying was accomplished without one serious mishap and includes long flights in rain, snow, fog and gales.

Among the passengers carried were H.M. The King of Greece, H.R.H. The Prince of Wales, and T.R.H. The Crown Princes of Roumania and Sweden. Lord Milner, the Lord Chancellor, Mr. Bonar Law, and the Emir Faisul of the Hedjaz.

The interior of the Handley Page passenger-carrying machine is silk lined and fitted with electric light and rose vases. There are gilt mirrors on the walls and dainty boxes containing wool for passengers who wish to plug their ears as protection against the roar of the engines.

NORTHOLT.—There is still a great amount of activity at Northolt aerodrome. The R.A.F. do a certain amount of flying on Avros and Bristol "Fighters," and also possess many other machines of varied type.

The Central Aircraft Co. are very busy, and some seven pupils are learning to fly on the Centaur biplanes. One of these machines, one believes the first to be built, is fitted with a 70-h.p. Renault engine and has been flown for some 80 hours by Mr. Herbert Sykes, O.B.E., including a voyage over South Wales.

The machine has now been examined by the A.I.D., who, forgetting that the strength of a chain is the strength of its weakest link, have demanded that several somewhat absurd alterations shall be made. The other Centaur machines are fitted with 100-h.p. Anzani engines and have a remarkably good performance, but are beaten on speed by the Renault.

The first large machine with two 160-h.p. Beardmore engines, which was built some months ago, flew very successfully until inspected by the A.I.D. During the inspection the tail of the machine was dropped heavily, and the fuselage was broken. It would be interesting to know whether the Department of Civil Aviation is responsible for damage done while machines are in its charge.

The second commercial machine is now being built, and has an enclosed cabin to seat eight passengers. The seats are easily removable and a considerable amount of freight may be carried. This machine should be completed in January next.

NEWCASTLE-ON-TYNE.

Owing to the number of passengers taken up at Middlesbrough last week, the Berkshire Aviation Co. have decided to prolong their stay and to postpone the start of the Newcastle flying week until Monday, Dec. 8th.

SHEFFIELD.

The Development Department of the Sheffield Corporation held a meeting on Nov. 27th to discuss the question of whether the manufacturers of Sheffield will co-operate with the civic authorities in retaining Coal Aston aerodrome as a civil aviation station.

Councillor Blanchard said that although Sheffield had been selected as a station on the national air routes, it was on a switch line from Nottingham, and if the Government decided to cut down the civil air stations the switch lines might be the first to go.

Lieut.-Col. Lockwood Marsh said that he understood that the Civil Aviation Department of the Air Ministry were anxious the Coal Aston should be maintained as Sheffield's aerodrome. Unfortunately they had no funds available to justify them keeping Coal Aston.

He understood that Vickers Limited intended to lay a scheme before the Development Department in a week or two. He was informed that the Air Ministry intended to bring before Parliament a short Bill which would authorise municipalities to acquire aerodromes with public funds. He believed that Leeds and Bradford contemplated participating in a joint scheme, and that Birmingham and Newcastle also had the matter under consideration.

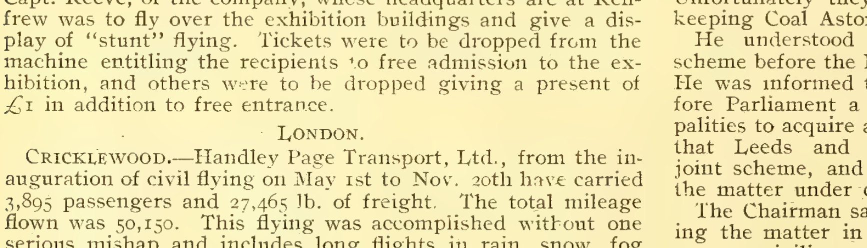
The Chairman said the Development Committee were keeping the matter in hand, and would do all they could to encourage civilian aviation if the people of Sheffield supported such a proposal.

WESTON-SUPER-MARE.

As stated in a recent issue of THE AEROPLANE, the Urban District Council, Weston-super-Mare, refused an application from A. V. Roe and Co., Ltd., and the Warwick Aviation Co. for flying rights on the sands next year.

The matter was first considered by the Sands Committee, and a deputation representing the Golf Club and the residents in the South Ward waited upon them to protest against the granting of any concession. The main point made was that spectators had tramped down the bents and so caused a sand-drift, the removal of which would be an expense to the Golf Club, while mention was also made of the nerve strain suffered by certain residents through aeroplanes flying over their houses. The Sands Committee were evidently impressed, and by six votes to four decided to recommend that there should be no more flying from the sands.

When this recommendation was considered by the District Council, some opposition was manifested, and one Councillor alleged that the only reason for the objection to flying from the sands was that some golfers were put off their stroke. He said that exponents of the ancient game of golf were trying to crush the young sport of aeronautics. A letter was also read from the Avro manager, Captain Westgarth Heslam, stating that more than three thousand passengers had been carried during the season. His company was prepared, he said, to accept a site nearer to the River Axe.



AN AERIAL NOVELTY.—The B.A.T. "Crow" Monoplane, as described in "Aeronautical Engineering" this week.

THE WAR GOD'S GIFT TO PEACE

BRITISH
NIEUPORT
& GENERAL AIRCRAFT Co. Ltd.

Telephone—
WILLESDEN 2455.

CRICKLEWOOD,
LONDON, N.W.2.

Telegrams—
"NIEUSCOUT,
CRICKLE LONDON."

ILLUSTRATED ON THE LEFT IS THE NIEUPORT NIGHTHAWK FIGHTING MACHINE.
ON THE RIGHT IS THE SPECIAL CIVILIAN 2-SEATER MACHINE.

Ultimately the Council accepted the recommendation of the Sands Committee by eight votes to four.

It will therefore be necessary for aircraft companies to consider the acquisition of inland aerodromes for next year if flying is to be continued at Weston. That flying is popular with the people of Weston is shown by the number of passengers who booked flights during the season. Also, the interest of a still wider public is proved by the complaint of the Golf Club about the crowds.

CANADA.

The aeroplane, Pathfinder II, piloted by Mr. W. H Brown, and with a passenger, left Victoria on Oct. 2nd for a voyage to the United States of America. The flight to Puyallup, a distance of 110 miles, was completed in 95 min. After giving exhibition flights at the fair at Puyallup, the machine was detained for a few days by the Custom authorities on a technicality.

The machine then proceeded to Friday Harbour in the San Juan County. Two photographic flights and a message-carrying flight to Anacortes were made from Friday Harbour. Several persons were taken up, including two trips of two passengers at a time.

The Pathfinder left Friday Harbour at 6.45 p.m. on Oct. 5th in thick mist and rain. Without a compass, and flying at 500 ft. in the clouds, the pilot landed safely at Victoria at 7.10 p.m. in the dark.

Recently a flight was made from Victoria to Seattle in 65 min., a time which created a record. In the first clearance certificate issued to the aeroplane at Seattle it was treated as an automobile, and the following questions had to be answered: Has the machine a wind-shield? Yes. Has it a top? Yes. License number ——. Number of cylinders? Eight. Tail light? No. The document was so unique in regard to aircraft that the Aerial League have had it photographed and a record is being kept of similar "clearances."

An aerial camera of the regular Royal Flying Corps type has now been fitted to Pathfinder II, and many pictures of the surrounding country and towns are to be taken.

SOUTH AFRICA.

Capt. S. Wood, the representative of Handley Page, Ltd., is in Cape Town preparing to establish an aerial passenger and mail service throughout South Africa, and to that end he is obtaining a number of machines from England. The daily service is to be between Cape Town, Pretoria, Johannesburg, and Durban. The complete journey from Cape Town to Johannesburg, including stoppages at Kimberley, Bloemfontein, and possibly other places, would occupy approximately thirteen hours. Exhibition flights will be made in Cape Town and other towns, before the service is started, to accustom the South Africans to aviation.

THE ARGENTINE.

It is reported from Buenos Aires that the French Air Mission is proving quite successful and so far there has been no accident. Passenger flights are being made in Farman Limousines and Bréguet Coupés three times a week. Up to Nov. 22nd two hundred and fifty passengers had had flights in aeroplanes and four hundred in gliders. [Presumably hydro-plane boats with airscrew drives are indicated by the word "gliders."—Ed.]

The French Aviation Mission have organised routes for aerial services in the Argentine. It is hoped that an inauguration flight will soon be made.

BRAZIL.

The Brazilian Aero Club intends at an early date to organise two aviation schools for civil use.

The existing seaplane school is increasing in size. It is at present almost entirely equipped with American aeroplanes.

An Italian company intends to open a seaplane service between Rio Grande do Sul and the Amazon.

The Aero Club of Brazil has encountered the difficulties and confusion arising from the absence of a standardised system of aeronautical nomenclature, which is identified by the fact that the majority of aviators in Brazil have been trained in various countries abroad and have imported the aerodrome slang of the place of their apprenticeship. A committee has, therefore, been appointed to draw up a Brazilian glossary of aeronautical terms.

FRANCE.

The Paris-Melbourne Flight.

M. Poulet arrived at Karachi on Nov. 11th, after a journey of 29 days from Paris, of which 12 days were lost through bad weather. He left Karachi a day or two later for Delhi, but had to land at Nasirabad, half-way between Karachi and Bombay, owing to the oil tank becoming unsoldered.

M. Poulet arrived at Calcutta on Nov. 26th, and left for Akyab (Burma), on Nov. 28th.

GERMANY.

Aerial Postage Stamps.

Two types of postage stamps have been issued in Germany, a 10-pfennig orange and 40-pfennig green. The stamps are inscribed Deutsche Flugpost. The designs on them respectively are a winged posthorn and an aeroplane in flight.

GREECE.

The British Industries Exhibition.

A note from the Federation of British Industries states that the Exhibition of British Industries at Athens, which opened on Oct. 14th, closed on Nov. 23rd. H.M. the King of Greece manifested the very greatest interest in the Exhibition from its start to the final closing. He paid continual visits to the Exhibition, and his interest has been reflected through all classes of the Greek commercial community.

Intense interest was shown in the flights by the Handley Page machine over Athens. Although definite figures are not yet to hand, there is no doubt that this was a very popular feature of the Exhibition, and that large numbers availed themselves of the opportunity of a flight.

The Greek community in general were very kind in extending constant hospitality to the exhibitors, and the officials of the Federation of British Industries responsible for the Exhibition. At all these gatherings expressions of goodwill and sympathy towards the British nation and the British manufacturing community were frequent.

The business community of Serbia, Roumania, Constantinople, Smyrna and other Near Eastern and Balkan centres arrived in large numbers. It is estimated that 100,000 people visited the Exhibition.

The Handley Page at the Exhibition.

Capt. William Shakespeare, M.C., writes from Athens:—

"I have the pleasure to report the successful completion of the first civilian trans-Europe flight. I arrived at Athens after the most trying and unpleasant stage of the journey from London. Taking advantage of what seemed to be good weather at Valona, I left in the early morning, and made quite good time, under good conditions, to Prevesa

"Shortly afterwards I landed at Tatoi, having done the journey from Valona in 4½ hours. This, I was afterwards told, was a record time. The people—Greek and English flying officers—were very surprised to see us, as the weather had been practically impossible all day; in fact, five minutes before we landed, an R.A.F. Handley Page machine, securely picketed, had been picked up by the wind and blown completely on its back, being a nasty mess of wreckage, which was spread out in front of us.

"Needless to say, after the buffeting I had received, I was greatly relieved to make our final landing; in fact, we were all pleased with ourselves at the successful completion of this long journey, although it had taken longer than we expected. This fact was due to conditions over which I nor the mechanics had any control. Altogether, the machine had been out in six whole days' rain. The engines, with the attention they received, stood very well

"On the day fixed for the inspection by H.M. the King of Greece, the Press turned up in copious numbers. We initiated them in the mysteries of the H.-P. and trans-Europe flight. I did two flights of Press people over Athens, and all went home very pleased with the machine, the new 'sensation,' and themselves. On these trips we did some pamphlet dropping over the city. Saturday, Nov. 1st, was a memorable day, for H.M. the King of Greece turned up and inspected the machine. He was greatly interested, and finally I persuaded him to come up for a flight. Since that occasion His Majesty has had two further flights, the last trip being from Athens to Corinth.

HOLLAND.

Mr. Fokker is said to be arranging a flight from Holland to the Dutch Indies, with Lausanne as the first stopping place.

ITALY.

The Italian correspondent of The Aeroplane writes:—

Raising Records.

Serjt. E. Luit on the Marchetti-Vickers biplane has been trying for the speed record as well as the climbing record. On Nov. 20th, at the Monte Celio aerodrome, Rome, he raised his own February record of 260.8 kilometres per hour to 274.2. The weather was wet and the machine according to its designer not quite *au point*. Ing. Marchetti has not resolved the propeller question to his satisfaction, according to one of the dailies whose correspondent is usually well-informed.

The Rome-Tokio Flight.

Reports of the start for Tokio being imminent are widespread, and it seems a fact that Gabriele D'Annunzio is to be at Rome before the end of the month.

(*Continued on page* 1871.)

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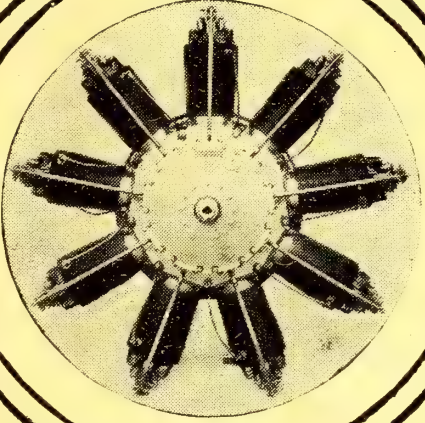

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THE WEEKLY COMMENTARY.

In a note on the future development of aero-engines M. S. M. Viale suggests that the multitudinous poppet of the standard type of aero-engine could be replaced by a simple rotary sleeve valve, and that for horse-powers of 1,000 or so the Diesel type of engine is almost immediately practicable.

THE AEROPLANE'S Danish correspondent has extracted from some of the German journals a series of interesting reflections on war-time practice. These will be found of considerable interest.

The call for engines specially designed for seaplane work is instructive, and the notes on practical war-time experiences with multiple-engined "Giant" aircraft are worthy of note.

The B.A.T Co.'s "Crow"—a diminutive machine of unusual design—is described and illustrated in this issue. To a certain extent the "Crow" resembles the famous Santos Dumos' "Demoiselle' of 1909, but the extreme simplicity and robustness of the design render it a noteworthy example of modern practice.

FUTURE DEVELOPMENTS OF AERO ENGINES.

BY S. M. VIALE.

Present-day aero engines, as developed during the war, have reached a fairly high standard of efficiency and reliability, and one may safely assert that they will be quite satisfactory for commercial purposes. As regards wear, conditions would be materially improved simply by slightly reducing the speed; the weight per h.p. would, of course, increase, but the life of the engine would be lengthened in much greater proportion.

Against the present standard system of high-powered aero engine (Vee, water-cooled type), there is, however, a very strong objection; excessive complication, leading to high manufacturing cost and decreased reliability. Many engines look complicated at first sight; some look simple and compact only because complication is, wisely, hidden under protecting covers.

One important reason for complication is the number of cylinders, as the power per cylinder cannot go over a certain figure without increasing the weight-power ratio owing to the limited piston speed. Very little can be done towards simplification on this side, except on some quite different principle.

VALVE LIMITATIONS.

A second limiting condition which makes for complication is the number of vaives, quite independently of the number of cylinders.

Roughly speaking, it does not seem possible or practical to get more than 15 h.p. per valve, at the best. As each valve requires at least five parts, if a 1,500 h.p. engine is wanted it will require 100 valves, and at least 500 small parts, all of them vitally important. It is useless to have a stiff crankshaft and a perfect lubrication if the engine will stop for a broken spring or a missing cotter-pin or a badly screwed nut, and there are one hundred of each. Supposing everything is well, think of grinding 100 valves and of overhauling the corresponding gear!

A solution which would give a real simplification is the adoption of the sleeve valve; all the objections that were made when the Knight system was suggested for car engines will be raised against the adoption of a similar system for aero engines, but one firmly believes that the practical result will be exactly the same. Instead of discussing, some enterprising firm will make an engine, and after careful (and probably long) testing, it will be a success. The chief objection would possibly be the excessive oil consumption; a large oil circulation is necessary, but this does not necessarily mean large consumption.

However, it is thought that the best solution, at least, in rather large engines of the Vee type, is not to be found in two or even one reciprocating sleeves, but in a rotary sleeve. This was suggested in 1910 by Mr. Butler, and if one remembers well an engine of the same type, single cylinder, for a light car was made, if not actually put on the market, in 1908 or 1909 in France. These particular engines were not, so far as is known, very successful. In the case of the French engine at least, the chief drawback was the rotation of the piston-rings. But this difficulty can be overcome, and there is no impossibility in the realisation of an aero engine of this type. The simplicity of the system is well worth a fair trial.

ROTARY VALVE POSSIBILITIES.

A steel sleeve rotating in an aluminium cylinder and driven by helical gearing will replace all the small parts of the ordinary timing gear. A slight reciprocating motion must probably be imparted to the sleeve in order to avoid the wear taking place in some definite portions of the cylinders. This will only require a fixed roller engaged in a cam cut in the sleeve; this roller with its pin, one skew pinion on the distribution shaft and the sleeve itself will supersede four valves, and, perhaps, 30 small parts of the standard type of distribution.

There will be only one shaft between the two lines of cylinders, and it will be much easier to drive; and all motions are smoother and without shock. In very large cylinders which would require six valves, it will be possible to increase substantially the dimensions of the ports by giving the sleeve a composite movement; uniform rotation, and harmonic angular motion superposed, the latter obtained by a harmonic sliding motion of the driving pinion on the distribution shaft. But for cylinders up to 7½ in. bore, uniform rotation of the sleeve will provide quite sufficient port area.

In the appended table some data are given for four engines of this type, two of them of the air-cooled type, as it seems possible to adopt this system of cooling, owing to the uniform temperature obtained through the rotation of the sleeve. Weights, of course, appear slightly greater than for the "Liberty" engine, given as a term for comparison; it must be remembered, however, that these engines were calculated for a low and commercial number of revolutions.

Even if the sleeve will simplify the engine itself very much, it does not allow of increasing the power without increasing, proportionately, the number of cylinders. There are now, flying or building, aeroplanes of 2,400 h.p., which represents six engines, 72 cylinders and . . . . some valves. The time seems ripe for the 1,500 or 2,000 h.p. engine, either for aeroplanes or for airships. Taking 60 to 80 h.p. per cylinder, which is probably a maximum for engines of the accepted type, this means 24 to 30 cylinders. We think that this number is excessive; at any rate, it would be a boon if it could be reduced.

The simplest idea is to adopt the two-stroke cycle; but in order not to lose any precious fuel we are led to do the scavenging with pure air; hence to the Diesel principle.

As no Diesel has been made weighing less than some 50 lb. per h.p. (unless the report of a German Diesel aero engine, of which we heard something months ago, be true), conservative people will say that it cannot be made light. The same would certainly have been strongly held 15 years ago by any responsible maker of petrol engines if asked if it was possible to get one h.p. for, say, 10 lb. The truth is that no Diesel engine has ever been made with the modern materials now used in aero engines, and designed by a brain with flying tendency, if we may say so.

Ordinary Diesel engines work with only 100 lb. mean effective pressure, stationary petrol motors as well as gas engines work with some 60 lb. M.E.P.; we have now got 125 lb M.E.P. in aero engines, which is the double of the standard commercial figure. One hundred lb. is by no means a limiting figure for Diesel engines, Sulzer Brothers having obtained 177 lb. indicated pressure in their Diesel locomotive tested in 1914. Theoretically, by using exactly the quantity of air required for the complete combustion of the fuel it is possible to obtain in a two-stroke Diesel cylinder slightly supercharged as much as 180 lb. M.E.P.; with about 1/5 excess air 160 lb. are obtained. This does not take into account the work absorbed by the scavenging pump.

It may be objected that it is difficult to run a Diesel engine at high speed; but speed limits have so much increased during recent years that this is not a very strong objection. "Fiat" Diesel submarine engines are already running at 600 revs., and nothing proves that this is the highest possible speed.

In aero-engines it would be necessary to reach from 900 to 1,000 revs. This will prevent using both the hot bulb system and injection of fuel without air, as in these cases the initial combustion is more or less localised and cannot be spread with sufficient velocity. The best plan seems to be to spray the fuel with supercompressed air taken from the cylinder itself, without any independent compressor. Thus the fuel will be injected by hot air and the combustion will be very rapid. The apparatus required is not complicated and can be made with only two moving parts, including the fuel regulator.

As regards scavenging, two solutions are possible; reciprocating double acting pumps or turbo-compressor. Although less efficient, the latter is probably the best, as it is much lighter and does not require attention or lubrication.

Cylinders can be made either with double ports, for exhaust and scavenging, or with valve scavenging. The latter, again, is to be chosen if a high speed is required; double ports could be adopted only if the speed, for particular reasons and disregarding the increase of weight, could be reduced to some 700 or 750 revs.

The weight of an engine does not increase in exact proportion as the maximum pressure developed, as often the strength of parts increases more rapidly than the weight. Anyhow, present engines, for a M.E.P. of, say, 125 lb., are calculated for a maximum pressure of 450 lb., which governs the dimensions of parts. A Diesel engine with a M.E.P. of 160 will have a combustion pressure of 500 lb., although in a sudden explosion the pressure may reach anything up to 1,500 lb.; but with a well-devised safety valve it is possible to reckon on a maximum emergency pressure of about 850 lb. The ratio between maximum and mean pressure is then 3.6 for standard engines and 5.3 for Diesel engines. The weight, roughly speaking, would be increased by about 35 to 40 per cent. Whether this can be accepted is an open question; but for very high-powered engines there seems to be no other choice.

This increase of weight has been taken account of in the weights given in the appended table for Diesel engines. Figures for two-stroke, both with a turbo-compressor and with reciprocating pump, and four-stroke are given. The latter engine is not only much heavier, but requires four or perhaps six, valves per cylinder, half of which are exhaust valves. Three valves per cylinder are also necessary in the suggested two-stroke engine, but these are inlet valves and need much less attention. In this case we should have three inlet valves for about 165 h.p., which is a much better proposition than 12 exhaust and 12 inlet valves for 400 h.p. as in ordinary engines of the present time.

The Diesel two-stroke engine would not be interesting for less than 1,000 h.p.; but for larger engines the following advantages will more than compensate the difference in weight.

(1) Simpler engine, as the power per cylinder will be much larger, 250 h.p. per cylinder being a possible proposition.

(2) Lower fuel consumption, even taking into account the power lost in scavenging.

(3) Greater safety against fire, paraffin being used instead of petrol.

(4) Quality of fuel indifferent; can be run on crude oil, vegetable or even animal oil if necessary. Most important in colonies and desert countries.

(5) No electric ignition. This advantage is apparent when one thinks of the wiring of a 32-cylinder double-ignition engine.

(6) Engine can be easily reversed both for manœuvring airships and for braking big aeroplanes when landing.

(7) If the turbo-compressor is adopted, the power output is practically constant at any height up to 5,000 or 6,000 feet. Although not as important as in war time, this advantage is not to be despised even for commercial aviation.

In conclusion, one is firmly convinced that, barring air-cooled radial engines (offering an alluring solution both for small cheap power plants and for large ones too when the question of weight is paramount, as in fast military machines), the development of aero engines should be directed towards the adoption of a rotary sleeve as distribution organ for powers up to 1,000 or 1,200 horse; but from 1,000 h.p. upwards the Diesel two-stroke engine with turbo-compressor scavenging offers the best and probably the only possible solution.

AERO ENGINES (Twelve-Cylinders. Vee Type).

Type of Engine	Liberty	Sleeve	Sleeve	Sleeve	Sleeve	Diesel	Diesel	Diesel
Cycle	4. Str.	4.Str.	4.Str.	4.Str.	4.Str.	2.Str.	2.Str.	4.Str.
Bore and Stroke...	5″×7″	5″×7½	6″×9″	6″×9″	7¼″×8½	8″×10″	8″×10″	8″×12″
Cooling	Water	Air	Air	Water	Water	Water	Water	Water
Engine Speed, R.P.M.	1500	1350	1250	1250	1650	950	950	900
Propeller Speed, R.P.M.	1500	1350	1250	1250	950	950	950	900
Mean Effective Pressure, lbs./□″	125	120	120	120	125	155	155	155
Developed H.P.	400	360	575	575	1100	2260	2260	1360
Scavenging System and Efficiency °/₀ ...	—	—	—	—	—	Turbo	Pumps	—
H.P. Required for Scavening ...	—	—	—	—	—	55	80	—
	—	—	—	—	—	250	170	—
Net H.P.	400	360	575	575	1100	2010	2090	1360
Fuel Consumption per H.P./Hour, lbs. ...	.48	.48	.46	.46	.45	.39	.39	.885
Oil Consumpton per H.P./Hour. lbs. ...	.04	.058	.055	.045	.048	.04	.045	.040
Total Consumption, per H.P. Hour, lbs. ...	.52	.538	.515	.505	.498	.43	.435	.425
Weight of Engine, alone, lbs.	820	840	1440	1500	2325	4930	49 0	5540
Weight of Cooling System, lbs.	240	—	—	350	600	1100	1100	675
Weight of Scavenging System, lbs. ...	—	—	—	—	—	480	1200	—
Total Weight in Running Order, lbs. ...	1060	840	1440	1850	2925	6510	7230	6215
Do. per H.P., lbs.	2.65	2.34	2.50	3.22	2.66	3.24	3.47	4.57
Weight with 2 hours' Fuel, lbs.	1475	1230	2030	2430	4020	8450	9190	7370
Do. per H.P., ...	3.70	3.42	3.55	4.24	3.65	4.20	4.40	5 43
Weight with 5 hours' Fuel, lbs.	2100	1808	2920	3300	5660	11330	12140	9100
Do. per H.P.	5.25	5.02	5.09	5.74	5.15	5.65	5.94	6.70
Weight, with 8 hours' Fuel, lbs.	2720	2390	3805	4170	7305	14270	15080	10830
Do. per H.P.	6.80	6.64	6.63	7.26	6.67	7.10	7.23	8.00

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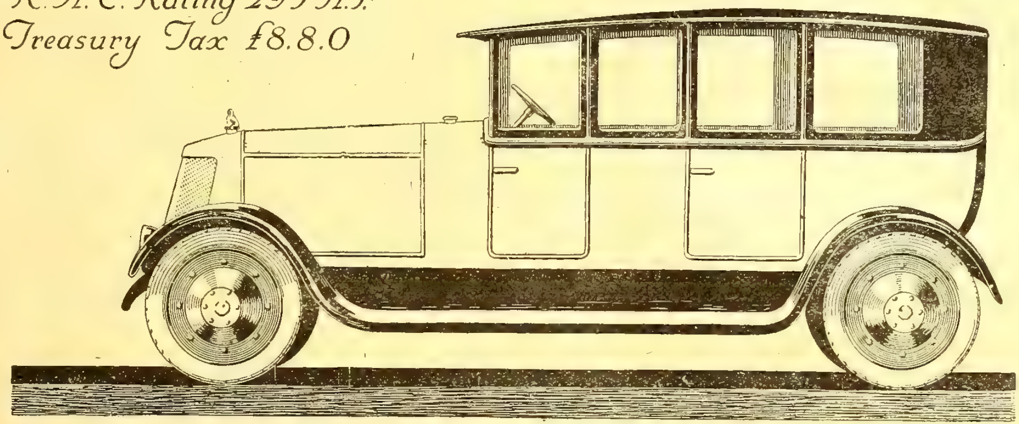

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By **ERIK HILDESHEIM, B.A., Copenhagen.**

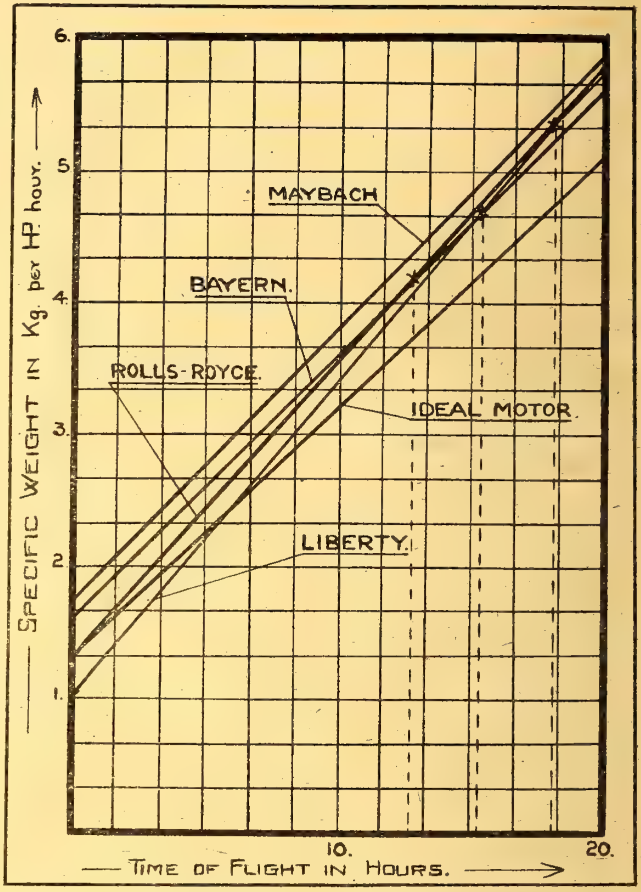

Chart showing total weight per B.H.P. of engine plus fuel for German and Allied aero-engines.

The technical aero journals of each of the former belligerent countries in their trade reports bear witness to the general eagerness to make the accumulated experiences of the war period universally known both with a view of claiming priority for new ideas and of showing the national interest to the best advantage.

So far as Germany is concerned the underlying idea in reviewing the work of the various aircraft firms is to illustrate how far German developments had gone in the various lines now that the end of the war may deprive the works for some time of the necessary means for going ahead experimentally.

The general condition of Germany may even foster commercial aviation beneficially in so far as cost proves not to be prohibitive, owing to the breakdown of other means of transportation. The delivery of their aircraft stores to the Allies leaves the Germans without inducement to convert existing war material, and they are thus free to discuss and enter upon the best lines for future development.

As the latter are best shown by commenting upon the past, the following news for which the source of information is given in each instance, may claim interest.

The Professor of aero engine design at Charlottenburg, himself the chief designer to the Mercédès firm, stated that beyond tempering before machining, heat-treatment of crankshafts for aero engines had now been abandoned in Germany. The after treatment only increased the resistance of the shaft to repeated shocks, and as a life of 100 hours could be relied on from the untreated shafts, it is presumed that the saving in the time of production justified the step.

In this connection it is of interest to note the difference in the physical characteristics of the crankshafts of the 260 h.p. Mercédès and the 230 h.p. Benz engines, and that of the Basse-Selve engine, given in the British official reports on these engines. These are:—

	Ultimate Tensile stress Tons per sq. in.	Elongation on 2 inches %.	Yield point Tons per sq. in.
Mercédès	62	13.5	55.7
Benz	62.5	21.3	55.2
Basse-Selve	55.5	19.5	44.5

It may be assumed that the Basse-Selve engine is a case of the untreated crankcase, the two earlier types showing the earlier practice.

The same Professor also stated that the Germans experimented for one year with copying the Rolls-Royce reduction gear, experiencing troubles from steel failures. Which should be read in conjunction with a statement by Naval Lieut. von Dewitz in a paper read before the German Aero Club that at one period the German Naval Air Force had difficulties in opposing the British opponent, owing to the Rolls-Royce motors in use there. The Hispano-Suiza reduction gear was also experimented with, the gears, however, failing after a few hours' running.

In an article by Marinebaumaster Fuhrberg, Berlin, asking for the development of a special motor for seaplanes in "Der Motorwagen," various well-known aero-motors are dealt with from the seaplane point of view.

The author first states that owing to lack of material German aero designers could not cut weights to such limits as their opponents, and that the works, having quantity production as the chief aim, had but small chances for experimental developments.

In fact, the Germans started with the Mercédès for their land-going and Benz aero-engines for their naval aircraft, which models remained favourites all through the war, and except for the introduction of three more makes of the same 6 cyl. vertical type (Opel, Selve and Maybach, the latter, as developed from the airship version), and the old favourite Argus of same type, only two new engines arose from the special needs of aerial warfare.

These were the B.M.W. (Bayern) motor and the Siemens 11-cylinder rotary.

To overcome the disadvantage of the high initial weight of the German engines, every effort was made to reduce the fuel consumption. As the most effective means super compression was chosen, which was driven almost to the limit of possibilities. For this reason the German aeromotors were too heavily built to attain good altitude flying.

Further arrangements for reducing the fuel consumption were a favourable designed form of the cylinder head, preheating of the gas mixture and attention to the carburetter, etc. Thus a reduction in petrol consumption to 185 grams per h.p. hour was achieved with the Bayern motor on test, and similar favourable results were obtained with the Maybach motor in airship service by the employment of a saving nozzle.

Low fuel consumption is, of course, of fundamental importance for long flights, and the figures for two German motors with special carburetter adjustment for sea flying are given together with two of the best enemy motors, viz., the 320 (350) h.p. Rolls-Royce and 400-h.p. Liberty.

It will be seen that the latter is the most favourable owing to the low engine weight up to flights of 15 hours' duration. At this point it crosses the curve of the B.M.W IIIa. The Rolls-Royce motor is superior to the latter so far as about 13 hours' flight, though it must be remembered that the former is provided with a reduction gear, which improves the screw efficiency considerably. The Maybach IVa is absolutely the most unfavourable during the whole flying time.

The qualities required of the ideal motor for seaplanes include a super performance of 10 to 15 per cent. above the normal brake h.p. for about five minutes, as this increased power is needed to rise from the water, and the output should keep almost constant to an altitude of 4,500 ft., which is the normal flying height for seaplanes, and a petrol consumption of 190 grams per h.p. an hour, that of oil being left out of consideration as of little importance for the weight.

A further point commented upon is the radiator question, the author saying that a cooling area sufficing in flight will be insufficient for the oft-needed taxying.

It is mentioned that the Windhoff radiator, the normal one for German landgoing aircraft, turned out a failure for seaplanes, as leakages resulted from the mounting angles, and when the radiators had for some time to be made of iron sheets owing to lacking material, they got eaten away by rust in a few months.

Quoting an instance of the variation in conditions for land- and seagoing aircraft, the 195-h.p. Benz motor (model BzIIIa) is quoted. The magnetos were removed from the rear to the front above the reduction gear, which rendered the motor useless for seaplanes, as the sea spray hindered the function of the magnetos, and this could only be remedied at the cost of considerable weight, though the change was much appreciated for landgoing aircraft owing to the shortened length of the motor.

It is further stated that the conditions for seaplanes and giant aircraft are similar, the former having to avoid alighting in open sea, and the latter being unable to land outside specially-suited grounds, and as the writer believes that giant aeroplanes, for instance, above the present sizes will always

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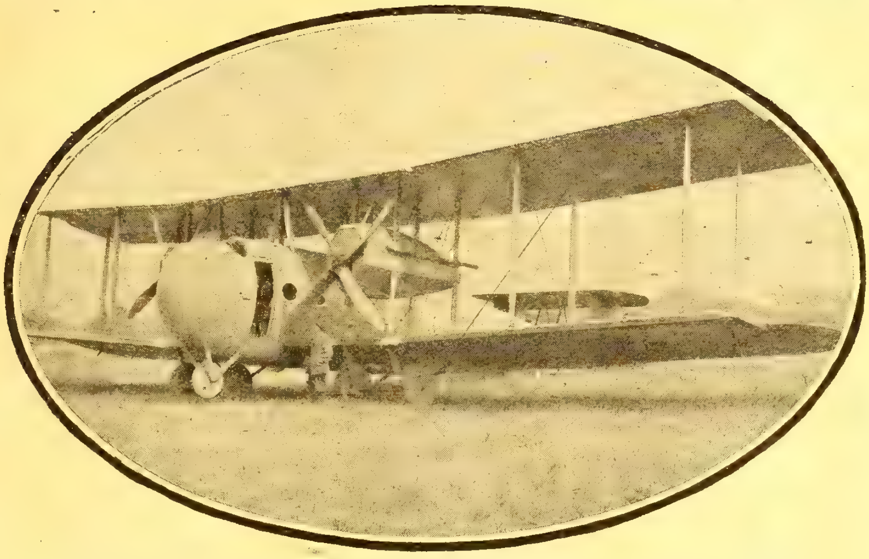

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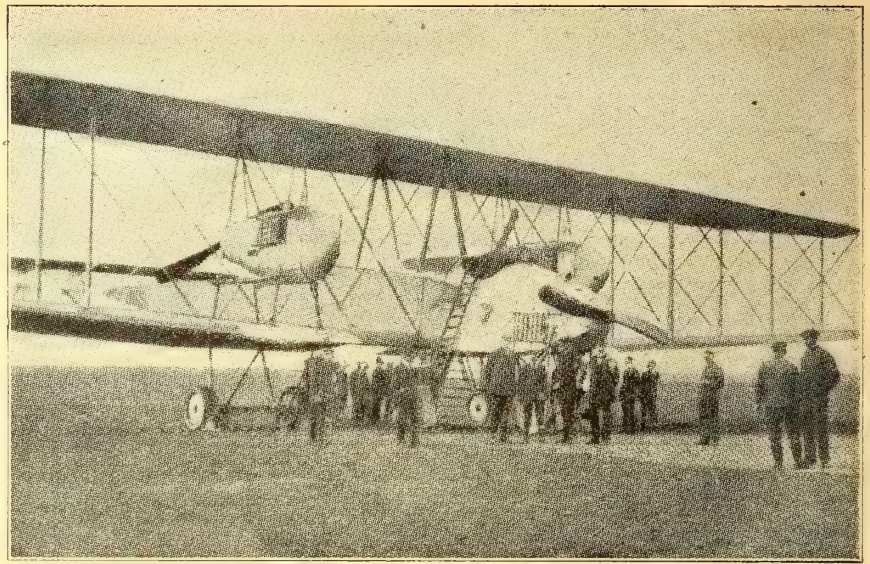
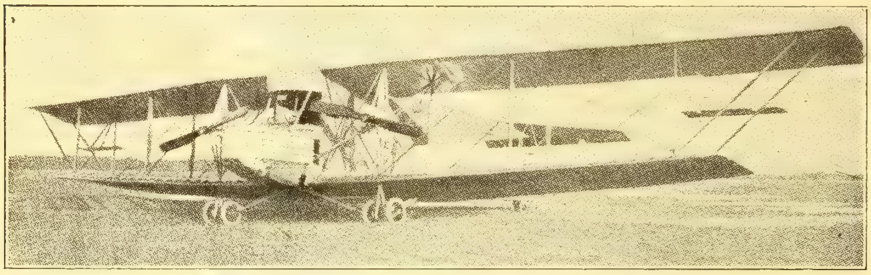
be equipped with floats. He intimates, by the way, that much danger was experienced in landing the giant seaplanes, wherefore petrol tank dropping experiments were entered upon in Germany, too, though from a different prime reason than the Allied fire-prevention efforts.



The first Gotha-built Zeppelin Giant with three 240 h.p. Maybach engines.

A paper, read before the German Aero Club by Lieut. Offermann, of the Reserve, can next be proceeded to for the information to be derived both with regard to details and to the history of the origin of German giant aeroplanes. It is both stated and illustrated how the first 3-engined biplane was built at the Gotha works to the order of Count Zeppelin, who, together with the Bosch firm, had been converted to the idea by the well-known German flying champion, Hellmuth Hirth, before the war, with a view to a transoceanic flight, and Count Zeppelin was induced to resume the project when an inventor offered him a 1-ton bomb capable of destroying the whole British fleet. Who would have neglected this statement without investigating its prospects? the German text asks with emphasis where one would have considered interrogation more appropriate. Count Zeppelin asked the assistance of Professor Baumann, as the best known aeroplane designer and of the technical director of the Bosch works, Klein, who lost his life together with the well-known pre-war pilot, Vollmoeller, in an experimental flight of the giant biplane; two other old-timers who gave their lives for the cause being Reichardt and Wittenstein.

The first giant was fitted with three 240-h.p. Maybach motors, one as tractor in the fuselage nose and two pusher plants, each in interplane engine nacelles, where later another motor was coupled to the other or drove a tractor screw. These German distributed drive giants were built by the Zeppelin works in Spandau and Staaken and by the licensees: Aviatik, Albatros, and Schütte-Lanz.



The first Siemens Steffen Giant Aeroplane.

The rest of German giant aeroplane types were provided with central power installation, viz., the Linke-Hoffmann 4-engined single-and twin-screw models, the 4-engined D.F.W. twin-tractor and twin-propeller type and the 6-motored 1,800-h.p. twin-screw and twin four-bladed propellered Siemens-Schuckert.

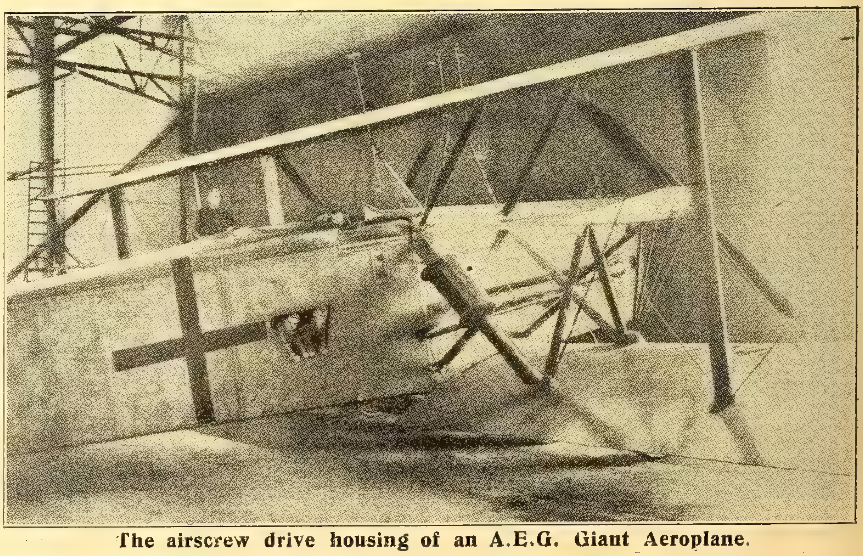
The first Zeppelin-Gotha was otherwise of normal design, of a span of 43 metres, weighed 6½ tons and could carry a useful load of 2½ tons, the 1-ton bomb hanging in a central body cage; all three engines drove through reduction gears. The first giant to be used on active service was R.10, in August, 1916, equipped with six 160-h.p. Mercédès motors. The first Siemens giant was built with the support of the firm's managing director, Secrete Chancellor Reichel, to the design of Engineer Steffen, under the supervision of Engineer Wolff, in Neumünster, 1914, flew to Johannisthal with seven passengers in June, 1915, and engaged on active service in the winter, its successors being employed, too, for school service. Great difficulties have been experienced with regard to insufficient lateral control, the first means of help being the Flettner auxiliary ailerons, while, owing to the Armistice the experiments planned by the giant aircraft inspection department, with a third pilot in form of a Servo motor combined with an automaton could not be carried out.

To raise the ceiling and increase the speed of the giants by maintaining the engine performance at high altitudes the R.30 aircraft was equipped with a turbo-blower supercharger, built by the firm of Brown, Boveri and Co., of Mannheim, to the designs of Engineer Noack (which may be the German aero turbine of rumours, equalling the French Rateau instrument comments). So far the ceiling of this Staaken biplane had amounted to only 11,400 ft., but on April 24th, 1918, an altitude of 18,000 ft. was reached, the speed being, at the same time, increased to 160 kilometres by the employment of adjustable airscrews to the design of Professor Reissner.

Further statistics and flight reports are quoted, as rendered hereafter. Twenty giant aeroplanes carried out 150 flights over enemy area, the distance covered amounting to about 50,000 kilometres, and 110 tons of bombs were carried. London was many times the object of the flights, those of greatest length going to Rouen and Le Havre.

The biplanes were often flown without intermediate landings from Berlin to the front station Gant in 7½ hours. R.33 reports of a flight to London that both engines of the left motor nacelle gave out, the front one stopping altogether, owing to the oil freezing. By cutting the tank and filling the motor by hand a landing in the sea was prevented.

R.25 reports:—Owing to some clips getting loose the left rear motor lost water; the clips were repaired and the engine continued running throttled. Then the motor lost several exhaust pipes, whereby the oil tank-covering was set on fire,



The airscrew drive housing of an A.E.G. Giant Aeroplane.

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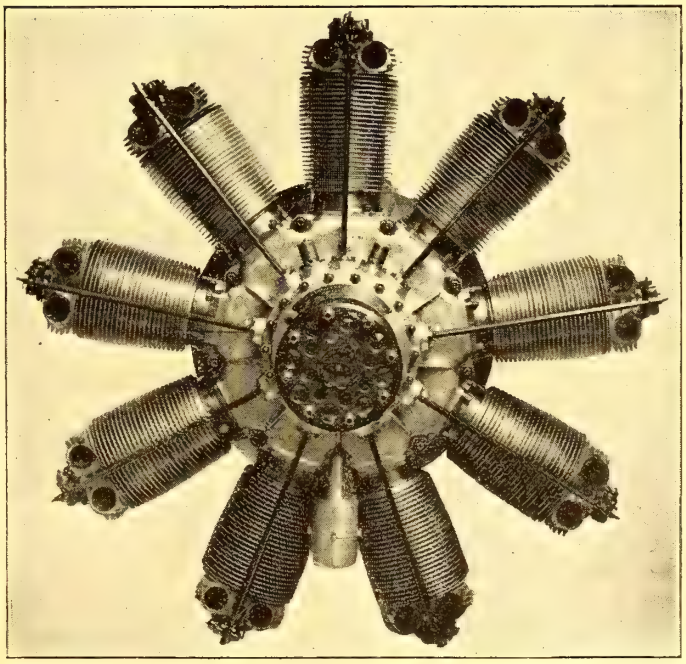

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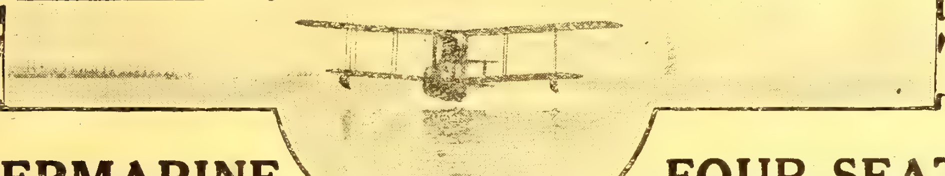

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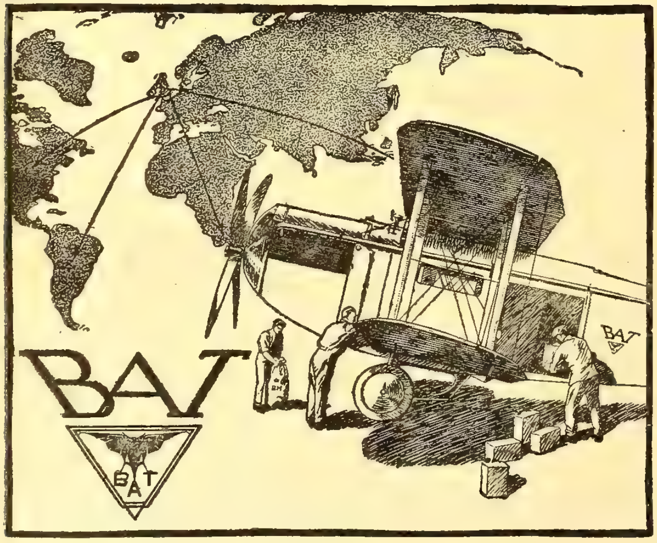

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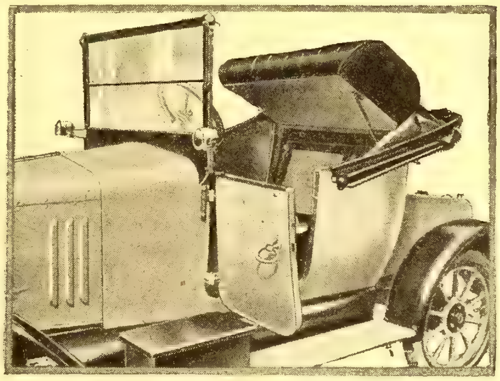

Note the method of packing away the patent side curtains (which open with the door behind the back cushion.

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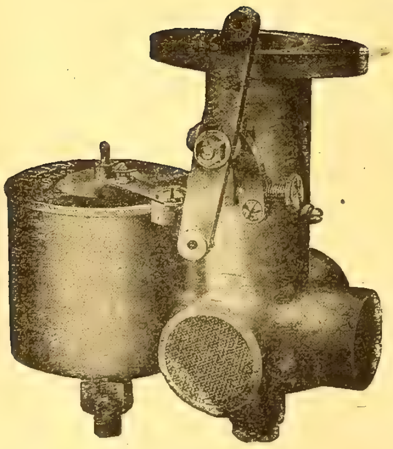

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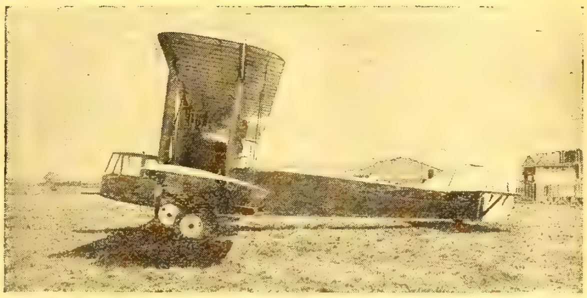

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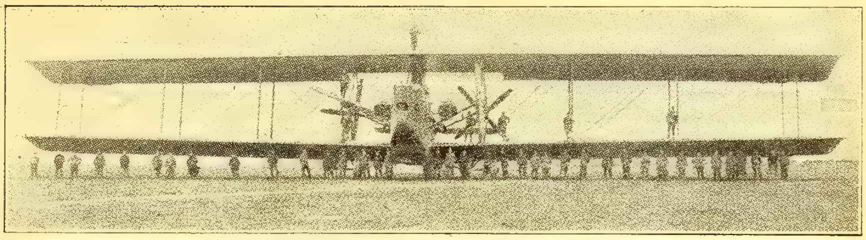


A six motor 1,800 h.p. Siemens Schuckert.

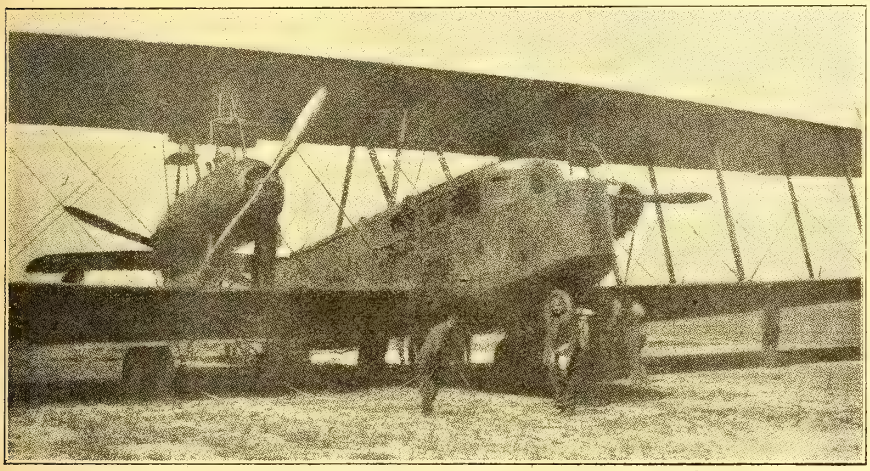
which was, however, extinguished, but the motor had to be stopped.

R.33 reports another time: A petrol pipe breakage and some ignition cables having come loose, but could be repaired in flight

R.13 report: A valve spring broke, the valve had to be lifted by hand on the whole return flight.

R.31 reports: Left rear motor stopped at the start, owing to non-circulation of the oil, yet the flight to Compiègne was carried out.

R.12 reports: The gear-drive in the left cabin broke and a fire started, which was extinguished during the flight. The landing was carried out safely with stopped left engine nacelle.



R.30, the four-engined Giant fitted with Brown Boveri Supercharger.

A fatal accident with R.21 was the result of a propeller made hurriedly to expedite front interests, that broke and caused the reduction-gear to break, whereby the cardan shaft got free and continued its eccentric movement, thereby destroying the plane, from which the accident resulted.

The weight of the instruments of a German giant aircraft is given as 500 kilos, 300 of which are, however, war equipment. This is naturally higher for aircraft with separated power units than for central power plant installation. The equipment includes tachometers for the number of revs. of engines and propellers, distance thermometers for the temperature of the radiator water and the oil in the motors and gears that must be kept constant, all in twin arrangement, first in the engine room, next in the pilot cockpit, electric transmission being generally adopted.

Of great importance are the means of communication, needing much improvement, long experiments with acoustic tools, like telephones, sirens, speaking tubes, having proved their uselessness for giant aircraft, as human hearing is, after long flying, unable to hear any more owing to the engine and propeller noise. Order transmission through a lens and prism system failed, as the orders written and projected on a ground glass screen blurred and got illegible. The engine telegraph has alone proved good, being in the latest form capable of submitting twenty orders, or even more by certain combinations. Special information is transmitted by means of a pneumatic mail tube as a supplement.

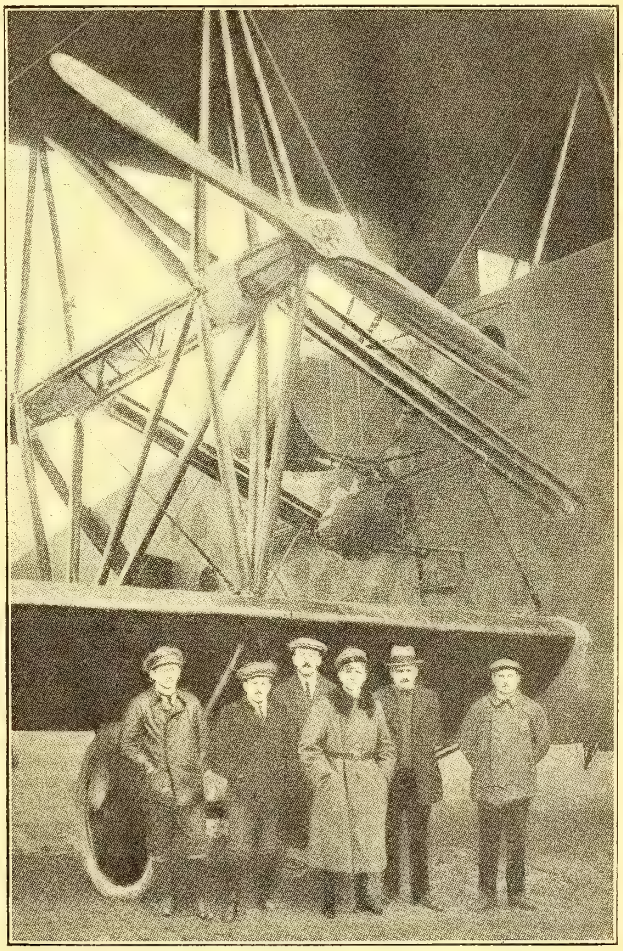
For night and cloud-flying the Drexel gyroscope position indicator is employed. The air speed is indicated to the pilot by either the Morell aneatachometer or by the Bruhn nozzle air current meter. The variometer tells the pilot whether the aircraft climbs or descends.

The value of the wireless receiving and sending plant, of a 600-kilometre capacity, is shown in the flight report of the commander of the giant aircraft squadron 501, reading:—

Report of the war flight in the night between August 24th and 25th, 1918, to B and C. "In favourable weather I started the flight to the aim, A, ordered by the 4th Army Headquarters, giving: Object, A; secondary object, B. Petrol was carried for 6½ hours' flight and 12 tons of bombs. The following giant aeroplanes participated: R.12, 13, 25, and 39. I am on board R.39. We were allowed to start after half-past 9 in the evening and must take the sea course, owing to the moonlight night, to avoid unnecessary losses. The barrier of the night scout region is felt to be a great hindrance, as the pointed-out route by the Dutch frontier means a considerable prolongation of the flight and holds in itself the danger of flying over Dutch territory. During the flight the weather conditions changed and the danger of fog had to be reckoned with from 3 o'clock in the morning. When I received this report by wireless, I made out by calculation that the aeroplanes could not be home before 3 p.m., and so ordered the squadron by wireless to attack B, this order being received by all aircraft. The ordered aim was attacked by three aeroplanes with three ½-ton bombs, with clearly observed good effect, while a fourth aeroplane had perforce to attack C, owing to engine trouble."

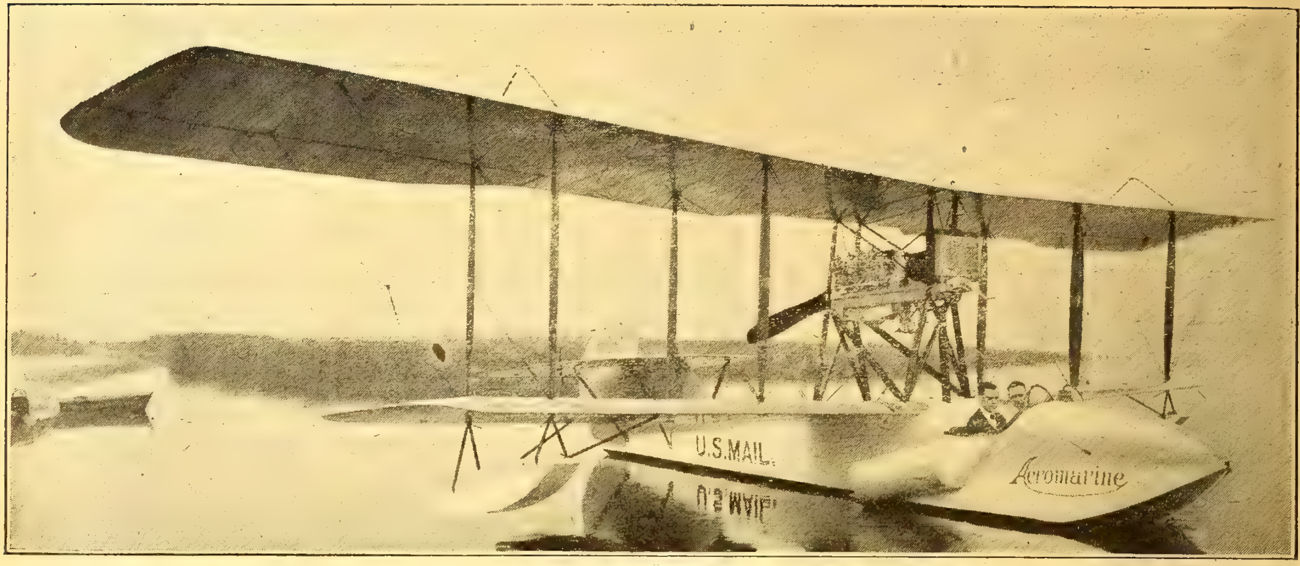
These reports from enemy sources clearly show that the accessibility of the power plant in the German central-drive type of machine possesses real advantages in the case of engine trouble. The report of repairs carried out in flight, extinction of fires, and so forth would in all probability have been entirely impossible in an interplane engine installation on a night flight.

[The note as to the R.30 being fitted with superchargers and with variable pitch propellers is of interest as showing the parallel lines of development in Allied and enemy countries.—ED.]



The Airscrew housing of a Siemens Schuckert Giant.

AERIAL MAIL DELIVERY TO SHIPS AT SEA.



The Aeromarine Flying Boat used for the mail delivery tests. The chute for the mail bag is seen on the side of the hull.

The following information as to a recent test of a method of delivering mails to a ship at sea has been supplied by The Aeromarine Plane and Motor Co., of Keyport, New Jersey.

As a means of expediting delivery of overseas mail, Mr. Otto Praeger, Second Assistant Postmaster-General of the United States, ordered the experiment of delivering mail by aeroplane to a ship at sea to be tried.

The Post Office entrusted the aerial part of the experiment to the Aeromarine Co., and with this end in view Mr. Uppercu, the president of the firm, started experimenting at his factory in Keyport. A number of plans were considered, but one suggested by Mr. Uppercu and thought most feasible by Pilot C. J. Zimmermann, was adopted. This consisted of trailing a weighted line about 200 feet long from the flying-boat. To the inner end of this line the mail-bag was attached, the idea being to entangle the trailing line in the rigging of the steamer, the release of the mail-bag taking effect as soon as the line became entangled. To try out this idea a 50-foot mast with guys, representing the rigging of a ship, was located on the beach at Keyport, and for a week daily tests were made until the apparatus used in the actual attempt was developed. It was found at the outset that to entangle the rigging and make the "tie" hold, more than one weight would be required.

A kind of cat-o'-nine-tails with seven tails was therefore adopted, five of the tails being of sash cord and two of steel cable, each being weighted by a bag containing one and one-half pounds of lead shot. The first attempt with this arrangement and a 100-pound mail-bag resulted in the parting of the main sash cord line. The cord was then replaced by five-thirty seconds cable and a half-inch strand rubber shock absorber. The trial resulted in breaking the shock absorber, and a larger one was substituted and two other shorter and heavier shock absorbers were added in the line, the line in this attempt being continuous to the bag. The mail-bag was carried in a built-up veneer chute firmly attached to the right-hand side of the hull of the flying-boat at an angle of 15 degrees slanting to the rear, the bag resting in it and being held by friction until pulled out from the open rear end by the cable when caught in the rigging.

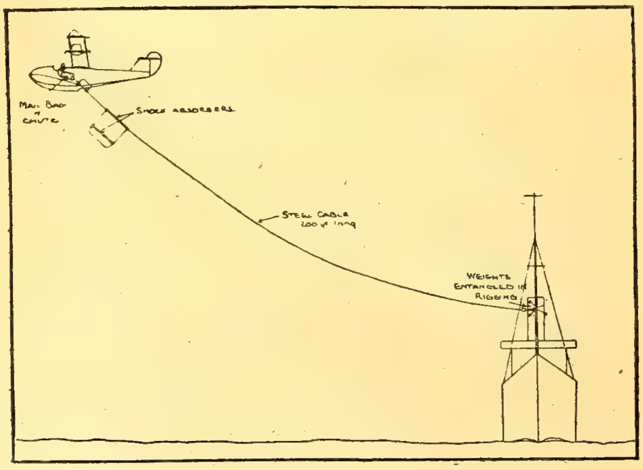


Diagram of the Aeromarine mail dropping device.

Several attempts were made with this arrangement and the bag was found to be too weak. A heavily reinforced bag was then made and trials were continued.

It was found possible to hook the rigging on the stationary mast on every attempt, thus making a perfect score.

It was decided to make the actual trial by delivering mails to the White Star liner "Adriatic," which sailed from New York on August 14th, 1919.

Considerable apprehension was, however, felt as to the results with a moving ship, and this was by no means lessened by the fact that on the morning of August 14th the weather was far from favourable. Mr. Uppercu, however, decided to make the attempt and accordingly ordered Pilot Zimmermann to bring the boat to New York. After the necessary formalities with the Post Office officials, at which time Pilot Zimmermann and Mechanic Greisinger were sworn in as temporary messengers of the Post Office Department, the mail was placed in the special sack, taken aboard the flying-boat, and at 1.30 p.m., fully an hour after the sailing of the "Adriatic," the flight was started. Mr. Uppercu's yacht, the "Lounger II," had left the Columbia Yacht Club, New York, at 10.30 to be on hand to render any assistance necessary.

At 2.10 p.m., one hour and 45 minutes after the sailing of the "Adriatic," the mail-boat was encircling the ship.

A few seconds later the attempt was made, the cat-o'-nine-tails catching the forward stay, as planned, and the mail-bag dropping into the sea to be hauled aboard by the "Adriatic" sailors a few minutes later. Pilot Zimmermann made certain the mail was safely delivered and then flew home to Keyport.

BRITISH INDUSTRIES IN SCANDINAVIA.

The Federation of British Industries has appointed Mr. Montagu Villiers to act as their Trade Commissioner in the Scandinavian countries.

Mr. Villiers has spent many years in the Consular Service, and lately in the commercial diplomatic service. He is well known in Stockholm, Copenhagen, and in commercial circles in Norway, and among other positions he held was that of British Consul at Stockholm from 1906 to 1913.

He speaks Norwegian, Swedish and Danish with the fluency of a native. The manufacturers of this country have been fortunate in securing his services.

Mr. Villiers was to leave for Scandinavia on the 25th inst., and he will make a tour of inspection, returning to England early in January next, when he will be able to make a report as to the economic conditions in Scandinavian countries, after which he will set up offices in Norway, Sweden, and Denmark.

Mr. Villiers will be accompanied by Mr. John Pitcher, who has made a special study of transport and trade conditions in various countries.

British Aircraft Constructors, please note.

AVIATION & GENERAL Insurance Co., Ltd.

Chief Office—56, ST. JAMES'S STREET,
LONDON, S.W. 1.

Special ANNUAL ACCIDENT POLICIES for AIR PILOTS.
Rebates of Premium allowed if prevented through sickness from flying or if unable to pass any Medical Re-Examination required by the Air Ministry or other Authority.

Policies issued under the Official Approval of the
ROYAL AERO CLUB
of the United Kingdom.

Passengers' ACCIDENT COUPONS for SINGLE or RETURN Journeys
Including Loss or Damage to Personal Effects or Baggage.

Special COMPREHENSIVE SCHEME for Employers of Pilots
Including Workmen's Compensation Liability with additional benefits and special advantages.

Indemnities in respect of CLAIMS by the PUBLIC for Injuries
Or Damage to Property, including Passengers.

Insurance of Postal Packets, Parcels or Goods by Air.
Loss or Damage to Aircraft.
FIRE INSURANCE, BURGLARY. WORKMEN'S COMPENSATION.

Important Advantages are offered to Transport Companies and Aircraft Manufacturers.

Authorised Capital £1,000,000. Subscribed £500,000.
Paid up £100,000.

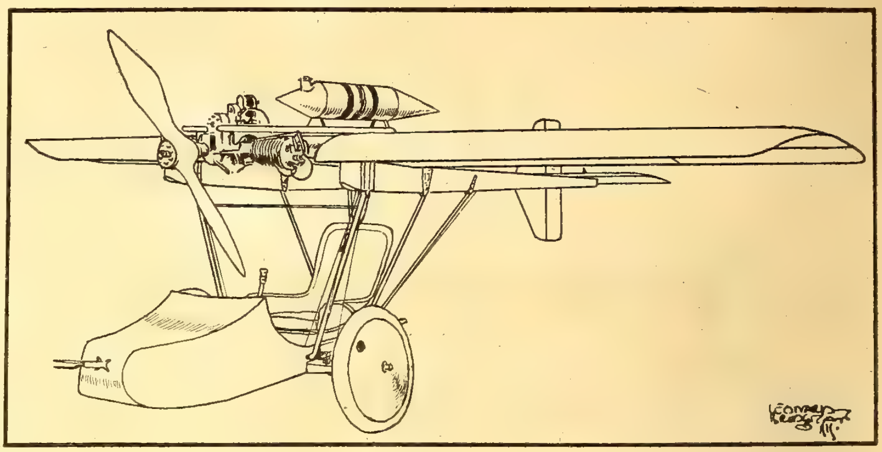
BATH AIRCRAFT LTD.

Manufacturers of Planes, Propellors, Struts, Fuselages, etc.

Highest possible quality guaranteed.

FLIGHT WORKS, LOWER BRISTOL ROAD. BATH.

THE B.A.T. "CROW."



A sense of humour is, of course, essential to success as an aircraft designer, but during the late war such a sense had of necessity—in the absence of other suitable stimulants—to be internally stored as a fortificant against the attacks of Technical Departments, A.I.D. Inspectors, and the like.

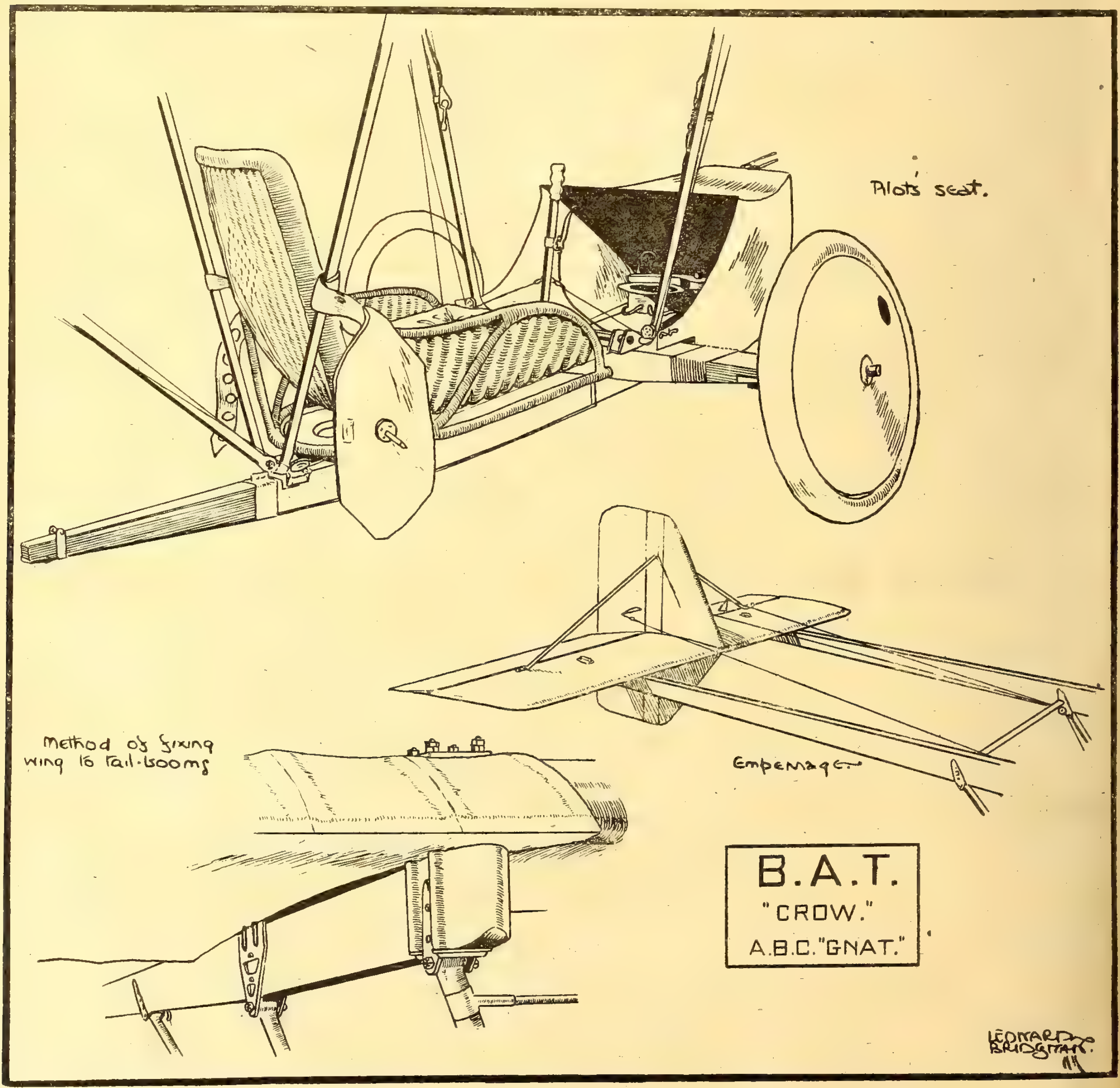
However, the war is now over; one understands that Haig and Haig have modified the tone of their advertisements, and at least one aircraft designer now appears to be in a position to share his jests with the world at large.

For, after all, it is difficult to avoid feeling that Mr. Koolhoven's latest product—the B.A.T. "Crow"—is to some considerable extent a jest. A good jest naturally, and therefore a serious affair.

For he has removed most of those things hitherto considered as essential to an aeroplane, and has produced a machine which flies, and flies well.

Practically, the "Crow" may be regarded as a sort of flying motor-cycle—it is certainly considerably less complicated in its structure than many of the denizens of Olympia during the recent cycle show, and there seems no real reason why it should not be sold at a price comparable to that of many of the exhibits there.

The aeroplane proper consists merely of two long, deep girders running fore and aft, carrying at their fore end an A.B.C. "Gnat" engine with an airscrew attached, and at their rear extremity a tail of normal construction.



G R

By direction of the Disposal Board

AIRCRAFT DISPOSAL DEPARTMENT

MINISTRY OF MUNITIONS.

AEROPLANES FOR SALE

AT

Greatly Reduced Prices.

ARMSTRONG-WHITWORTH. DE HAVILLAND 6.
F.E.2B. B.E.2E.
SOPWITH CAMEL.

The above Aeroplanes, although not of the latest type, would prove eminently suitable for School Machines or Joy Rides. They are complete with engines and instruments, and spare parts are also available.

Enquiries and application to view should be addressed
THE CONTROLLER, AIRCRAFT DISPOSAL DEPARTMENT, WELCOME CLUB, EARL'S COURT.
Telephone—WESTERN 4950. Telegrams—"CLEARHOUSE, AEROSUPPLY, LONDON."
Nearest Station—WEST KENSINGTON.

NOTE.—For full particulars of other Government Property for sale, see "SURPLUS," Price 3d., at all Bookstalls ; or by quarterly subscription of 2/- post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.

G R

By direction of the Disposal Board

AIRCRAFT DISPOSAL DEPARTMENT

MINISTRY OF MUNITIONS.

AEROPLANE DOPE

FOR SALE BY PUBLIC TENDER.

The following quantities of Aeroplane Dope are available for disposal :—

18,292 Gallons Cellulose Acetate Dope.
7,252 Gallons Nitro Cellulose Dope.
1,834 Gallons Mixed Dope.
6,000 Gallons S.33 Dope Solvent.

The material is located at Coventry, Sheffield, Liverpool, Hendon and Farnborough, where it can be inspected in bulk.

Tenders are invited for the whole or part thereof.

All enquiries for information and tender forms should be addressed to:

The Controller, Aircraft Disposal Department, Welcome Club, Earl's Court.
(Nearest Station—West Kensington—District.)
Telephone: Western 4950. Telegrams: "Clearhouse, Aerosupply, London."

IMPORTANT.—Please note change of address from York House, Kingsway, to Earl's Court.

NOTE.—For further particulars of other Government Property for sale see "SURPLUS" price 3d., at bookstalls, or by quarterly subscriptions of 2s. post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.

Above these main girders and towards their forward end a single-piece wing 18 feet in span is attached. This wing is built on two spars which taper in depth from the centre to the wing tip and which are sufficiently strong to support the wing loads without bracing wires.

Below the wing a long wooden skid is suspended from the main girders by six steel tubes and across the skid there is fastened a laminated wood axle carrying at its outer ends a pair of landing wheels. On the skid is built up the pilot's habitacle, consisting of a light wickerwork seat aft, and an arrangement resembling the fore end of a side-car for the reception of the pilot's feet.

The whole affair is extraordinarily simple—for instance, the wing may be removed for storage purposes by undoing 12 nuts and resecured by doing up again the same 12. There are no bracing wires to adjust and no trueing up to do.

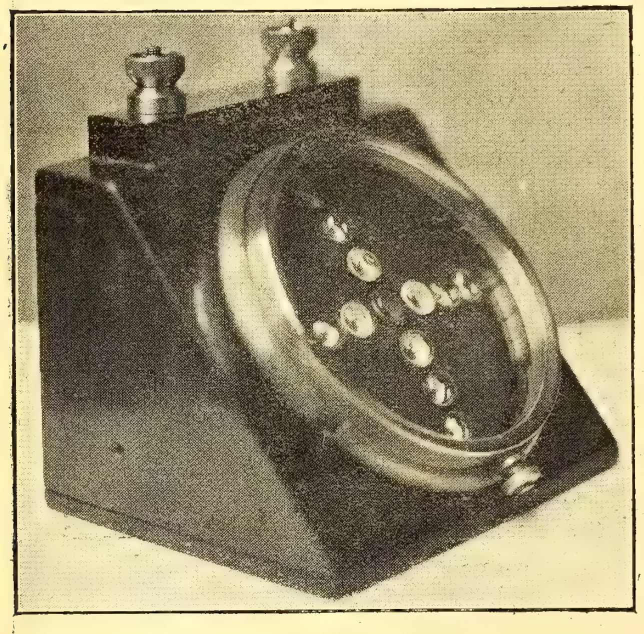
The petrol and oil tanks are contained within a torpedo-form casing over the wing, and are attached to the engine mounting so that the whole power plant forms one unit and can be detached from the machine as such. The tank capacity is five gallons of petrol and ½ gallon of oil—sufficient for nearly two hours' flight or 130 miles.

The following are the chief figures relating to this machine :

Overall span	18 ft.
Overall length	14 ft.
Overall height	5 ft. 8 in.
Weight empty	265 lb.
Speed (maximum)	65 m.p.h.
Speed (minimum)	30 m.p.h.

THE CLAYTON CLINOMETER.

The instrument shown in the attached photograph embodies an extremely ingenious form of indicator of a type suitable for night flying. The instrument itself is a gravity controlled clinometer and it is so arranged that when the machine is on a level keel laterally or in any other position of no sideslip, and is also at its normal flying angle, a central small electric lamp coloured green is kept illuminated.



This green lamp is at the point of intersection of two rows of similar red lamps, which are caused to light up by any divergence of the machine from these conditions. The indication is extremely vivid and cannot fail to attract notice—which is by no means the case with the usual type of bubble clinometer.

This method of indicating could be applied to a number of instruments of varying types, and the inventor is open to receive offers to take up the British patent rights.

AN AMALGAMATION.

Arrangements have been completed for the amalgamation of the business carried on by Mr. Robt. W. Paul at New Southgate, London, with the Cambridge Scientific Instrument Company, Ltd. Mr. Paul will join the Board of Directors and the manufacture of instruments will be continued both at Cambridge and at New Southgate. Until the end of the year the selling and manufacturing arrangements will be unchanged, but on January 1st, 1920, the name of the Company will be altered to the Cambridge and Paul Instrument Company Ltd., and as soon as possible the Head Office and Showrooms transferred to London.

THE MARTINSYDE MOTOR-CYCLES.

Like so many large aircraft firms who, since the signing of the Armistice, which brought with it the cancellation of all large aircraft contracts, have taken up the construction of sundry articles likely to be more in demand to a war-worn nation than fighting aeroplanes, Martinsyde, Ltd., of Woking and Weybridge, have turned their attention to the manufacture of motor-cycles on a large scale.

A brief specification of their 6-h.p. Vee-twin Martinsyde-Newman combination is as follows :—

Engine : 70 mm. bore by 88 mm. stroke, 680 c.c. 50 deg. twin cylinder. Overhead exhaust, and side inlet valves. Automatic lubrication.

Ignition : M.L. high-tension magneto.

Carburetter : Special two-lever Amac.

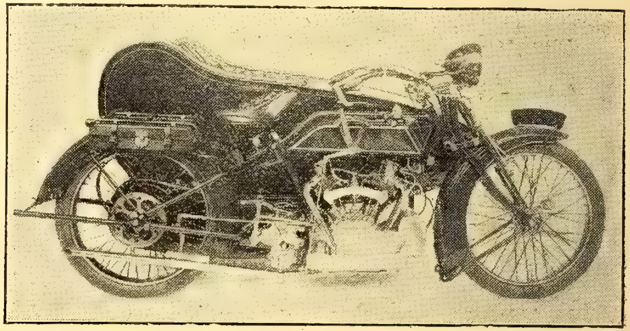
Gear Box : A.J.S. 3-speed countershaft with cork inset plate clutch and kick starter.

Forks : Brampton Biflex.

Tank : Square design , two gallons of petrol and ½ gallon of oil, with large filler caps, priming tap, hand pump and semi-automatic drip-feed.

Saddle : Brook's.

Wheels and Tyres : 650 by 65 Dunlop special.



Equipment : Includes carrier, two Brook's long pannier tool-bags, number plates, inflator, horn, oil can and spanners, separate stands to both wheels.

Side-car : Chassis specially designed for accessibility and quick detachment, 3-leaf Cee springs, large mudguard (well balanced), coach-built body with luggage carrier at rear.

Finish : Bicycle and side-car chassis enamelled black lined gold, all bright parts heavily plated. Side-car finished in Royal blue lined gold and upholstered in Royal blue.

A model has been on the road for some time and has been thoroughly tested, as the following letter given hereafter shows.

"After it had undergone a test of 5,000 miles we had the pleasure of personally testing the Martinsyde-Newman 1920 Combination for several hundred miles. We found it to be exceedingly speedy, an excellent hill-climber and, moreover, a very comfortable mount, and one that we highly recommend. "(Signed) J. L. and W. H. Bashall."

Deliveries commence in January, 1920, and the makers state that there will be no increase on the present price of £170 during 1920.

THE TRANS-AMERICAN RACE.

The following letter has been received :—

Sir,—Some interesting data has just come to hand from Washington, D.C., in connection with the performance of the Rolls-Royce engined "Bristol Fighter" which was entered as a competitor in the recent American Transcontinental race and was piloted by Brig.-Gen. L. O. Charlton, C.M.G., D.S.O., the British Air Attaché at Washington.

This race started on October 8th last. The first day witnessed a number of accidents, amongst which was the forced landing of the above-mentioned "Bristol Fighter." Some misleading reports stated that the reason of the machine making a forced landing was due to engine trouble.

In response to our inquiries we have now received a letter from Brig.-Gen. Charlton reading as follows :—

"Many thanks for your letter of October 9th, and it was, as you say, a great disappointment for me to have been put out of the Transcontinental event at such an early stage, more especially as I consider that I had the best machine and engine in the race.

"It is not quite correct to say that I had carburetter trouble. What happened, actually, was that owing either to bad luck or bad management some water got in the petrol, with the usual consequences of a forced landing in not very favourable country. *I attribute no blame whatever to the engine,* and hope, in fact, to have it in the air again before many days elapse."

We venture to hope that you may be able to publish this communication. (Signed) For Rolls-Royce, Limited.

C. Johnson (Managing Director).

BLOCTUBE CARBURETTORS

FOR AERO-ENGINES

RENÉ TAMPIER

CONSTRUCTING ENGINEER,
INVENTOR AND PATENTEE

CONTRACTOR TO H.M. AND ALLIED GOVERNMENTS.

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BLOCTUBE CARBURETTORS COMPLETE.

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Large Variety of Models.

INTERMEDIATE BRACKETS.
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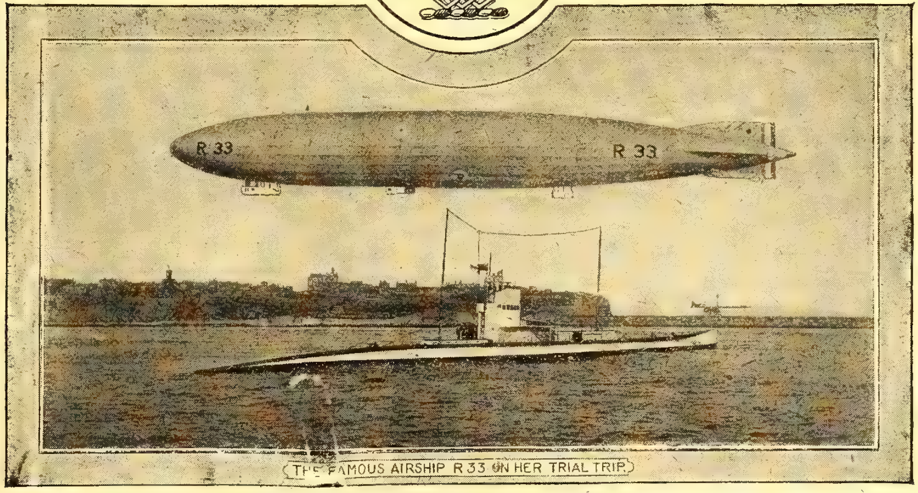
DANEMERE STREET, PUTNEY, LONDON, S.W.15.

Telephone—PUTNEY 242. Telegrams—"TUBLOCARB, PUT, LONDON."

TRADE MARK.



THE FAMOUS AIRSHIP R 33 ON HER TRIAL TRIP.

— RIGID AIRSHIPS FOR WAR, MAIL & PASSENGER SERVICE. —

SIR W. G. ARMSTRONG, WHITWORTH & CO., Ltd.,
NEWCASTLE-UPON-TYNE. Works: Barlow, near Selby, Yorks
LONDON OFFICE: 8, GREAT GEORGE ST., WESTMINSTER, S.W.1.
TELEGRAMS: "ZIGZAG PARL, LONDON." TELEPHONE: VICTORIA 4010.

The New 15.9
ARROL - JOHNSTON

THIS NEW car weighs but 22½ cwt., with complete equipment oil and water, can touch 50 m.p.h. on the level and run from Dumfries to Birmingham on top. The petrol consumption is 25 m.p g. and oil 1,250. Built largely in Aircraft Material, the price is £625, inclusive of Electric Lighting and Starting Set, Dunlops, Steel Disc Detachable Wheels, Speedometer, &c., &c.

CATALOGUES from
Arrol Johnston, Ltd.,
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LONDON AGENTS:
Leverett, Thorp & Kearton, Ltd.,
122, New Bond St., W.1.

GWYNNES
LIMITED.

CONTRACTORS TO H.M. GOVERNMENT

MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE

"CLERGET" PATENT AERO ENGINES

S·B·A·C
THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS

ENGINEERS, LONDON.

"GWYNNE, LONDON." **"HAMMERSMITH 1910."**

(*Continued from page* 1846.)

Some New Machines.

From down South I am told of a very, very big seaplane on the stocks, as well as the three-metre biplane and a similar span triplane with 35 motor, previously mentioned. Still, one waits for the Government competition spoken of in the spring for these tiny flying things. I am told that the regulations are constantly being modified, and one constructor assured me that there is no call for a thing that will fly with 35 h.p., but would be infinitely more comfortable and comforting with 50.

The U.S. Aero Club's Tour.

Secretary Augustus Post and Mr. Franklin Hunt of the U.S. Ae. Club are passing through Milan and other Italian cities on behalf of their organisation and in connection with the "Round the World" contest. They are not flying, but are busy choosing routes and assuring the co-operation of the Italian sporting authorities for the coming event. Comm. Mercanti met them at Milan and showed them the various aeroplane works and other places of interest in the city of Milan, not forgetting "Ceva"—not yet dry, or likely to be, despite American forced thirsts.—T. S. H.

JAPAN.

Further details of the aerial postage service Tokyo-Osaka are now to hand. The service, a distance of about 290 miles, was to have started on Oct. 4th. Prizes were offered in connection with the flights for the quickest successful round trip.

Unfortunately the weather on Oct. 4th was not favourable, and the next day it was worse, so the first air mail, for which 40,000 postage stamps had been issued and bought, went to its destination by rail. It was intended to renew the project on about Oct. 20th.

SWEDEN.

An Aerial Tour.

Lieut.-Col. G. L. P. Henderson (ex-R.A.F.) reached Stockholm on Nov. 29th, from Copenhagen, on his own Armstrong-Whitworth biplane. The flight from Norrköping to Stockholm was accomplished in 55 minutes. He encountered heavy snowstorms and fog on the way, and had to land several times.

UNITED STATES OF AMERICA.

The Trans-Atlantic Handley Page.

The four-engine Handley Page aeroplane, which was entered for the Atlantic Flight, piloted by Major H. G. Brackley, flew recently from Parrsboro', Nova Scotia, to Greenport, with twelve passengers, covering a distance of 600 miles in eleven hours. Hundreds of Americans waited half the night in the rain for the machine to arrive, the landing ground being illuminated with flares and searchlights similar to those which formed a beacon of welcome for the British airship R.34.

The flight was accomplished in wind, rain, and darkness, which made the task of Admiral Mark Kerr, the navigator, a difficult one. Whilst over New England coast in darkness and torrential rain the many lighthouses along the seashore were utilised as guiding landmarks.

A Seaplane Height Record.

What is claimed to be a height record for a seaplane was made on Sept. 30th last at Port Washington, Long Island, U.S.A., by Mr. C. S. Bragg, accompanied by Mr. C. J. Younger on a Leoning sea-monoplane. In 49 minutes from leaving the water the machine reached an indicated height of 19,100 ft.

The machine used was practically identical with the Leoning land monoplane two-seater and was fitted with a 300-h.p. Hispano-Suiza engine.

AIRCRAFT IN PARLIAMENT

HOUSE OF COMMONS.

Nov. 24th.—The following oral answer was given:—

DOUGLAS-PENNANT INQUIRY.

Sir J. BUTCHER asked the Prime Minister whether he can state the approximate total cost to all parties concerned of the recent Committee of Inquiry of the House of Lords into the case of Miss Violet Douglas-Pennant; what portion of that cost will fall on the public purse; and whether a method can be devised whereby persons who are, in the course of such an Inquiry, made the subject of charges which turn out to be totally unfounded may be protected against the cost of defending themselves against such charges?

Mr. BONAR LAW: It is not possible at present to state the approximate total cost of the recent Inquiry, or what portion of it will fall on the public purse. As regards the last part of the question, my hon. and learned Friend's suggestion is receiving consideration.

Sir J. BUTCHER: Will my right hon. Friend consider the propriety of making provision that evidence given before these Committees of Inquiry shall not be regarded as privileged?

Mr. BONAR LAW: Nobody knows better than my hon. and learned Friend that that would be a very big departure to make

The following written answer was given:—

AIR MINISTRY (STORES).

Mr. HOHLER asked the Under-Secretary of State to the Air Ministry how many yards of cloth (various), how many pairs of boots, how much hosiery, flannel, leather, hardware, crockery, and glass, how many brushes and brooms, and what amounts of timber are held by this Department; and will he give particulars of the amounts disposed of and to whom from April 1st last to October 1st last?

Mr. CHURCHILL: The stocks of cloths, hosiery, leather, and timber held by the Air Ministry are given below. The preparation of a list of the stocks of hardware, crockery, glass, brushes and brooms would involve an amount of clerical labour which would not be justified in the present reduced state of staff.

Cloth in yards: Gabardine, blue, 147; overcoating, khaki, 31,401; serge, blue, 136,963; tartan, blue, 67,930; serge, khaki, Canadian, 13,266; serge, drab mixture, 102; whipcord, blue, 3,220; whipcord, khaki, 20,658.

Boots, ankle, pairs, 15,535.

Hosiery in pairs: Socks, worsted, 445,947; drawers, woollen, 109,846; vests, woollen, 33,341; Shirts, flannel, 232,390; flannel, nil.

Leather in pounds: Soles, bend, 1,014; bellies, struck, 24; shoulders, 9; tongues, 5½. Lifts, assorted and in pairs, 4,217; soles, half, 32,404; tip, fillings, 17,568.

Timber in standards: Aeronautical timber, 338; other timber, 157.

None of the above classes of materials were declared surplus between April 1st and October 1st.

The following quantities of cloth were declared surplus on October 22nd and 25th, and are being handed to the Disposal Board:—
Cloth in yards: Gabardine, blue, 147; overcoating, khaki, 31,401; serge, blue, 100,000; tartan, blue; 50,000; serge, khaki, 13,266; serge, drab mixture, 102; whipcord, blue, 1,165; whipcord, khaki, 20,658; cord, khaki, 20,658.

* * *

Nov. 25th.—The following oral answer was given:—

CIVIL AVIATION.

Major GLYN asked the Secretary of State for War whether the Government contemplate assisting the industry engaged in civil aviation by any of the suggested methods contained in Section III of the Air Ministry's Synopsis of Progress of Work in the Department of Civil Aviation (Cmd. 418).

Captain GUEST (Joint Parliamentary Secretary to the Treasury): Indirect assistance by the provision of key aerodrome and shed accommodation, the collation and issue of information and the provision of communication is being afforded to civil aviation. The question whether any further action is necessary is under consideration.

* * *

Nov. 26th.—The following oral answer was given:—

ROYAL AIR FORCE (HAIR FOR MATTRESSES).

Mr. PARKER, replying for the Secretary of State for War to Mr. Macquisten, said that a request was made to the Disposal Board by the Air Ministry to reserve 90 tons of hair, and that the Ministry has been informed that the hair so reserved is at Neasden. To a considerable extent airmen have hitherto been sleeping on straw palliasses and on bed boards, and the hair referred to above has mainly been obtained for the manufacture of hair mattresses to remedy this state of affairs at the stations to be permanently retained by the Royal Air Force. It is not the intention of the Air Ministry to store hair in excess of immediate requirements.

Mr. MAQUISTEN: Is the hon. Gentleman not aware that there are thousands and thousands of beds, belonging to the Army, stored up and down the country? I could give him instances. For what purpose are they making new ones when these stores are enough?

Mr. PARKER: I do not know anything further about the matter.

* * *

The following written answer was given:—

ROYAL AIR FORCE.—AIRSHIP SERVICE.

Lieut.-Comdr. KENWORTHY asked the Under-Secretary of State for the Air Ministry how many large rigid airships are now in commission; how many large rigid airships are under construction; how many large airship sheds are in use; and how many have full staffs and crews in attendance for handling airships; and what is the estimated total cost next year of the Airship Service, rigid and non-rigid, for the Royal Navy?

Mr. CHURCHILL: The reply to the hon. and gallant Gentleman's first question is that there is one large rigid airship (R34) in commission for the Navy, and that two (R32 and R33) are being maintained temporarily, pending a decision as to the most advantageous method of disposing of them.

The reply to the second question is that the construction of R38 is proceeding under an arrangement for her sale, when completed, to the Government of the United States of America. A certain amount of work is being done on three other ships, pending the issue of negotiations for their use for commercial purposes.

The reply to the third question is that the large airship sheds in use are five in number, at Pulham, East Fortune, and Howden. It is intended to retain permanently for service purposes the airship station at Howden with two large sheds. The reply to the fourth question is that none of the air ship stations has full staffs and crews. The reply to the fifth question is that the Estimates for the Airship Service are included in the general Estimates for the Royal Air Force, and that these latter being still under consideration no figure can be given. Even when the Royal Air Force Estimates are passed, it is not intended to show separate Estimates for the airship side of the Air Force, because the personnel of the different branches will, to some extent, be interchangeable within the Service.

* * *

Nov. 27th.—The following oral answer was given:—

ROYAL AIR FORCE.—GOVERNMENT POLICY.

Maj.-Gen. SEELY (by private notice) asked the Prime Minister whether the Air Policy of the Government in respect to the Air Ministry is the same as it was on Nov. 14th, 1917, when the present Lord Privy Seal stated that the whole of the Air Service must be independent of either the Admiralty or the Army Council; why the Secretary of State for War is now President, both of the Army

Council and the Air Council, and whether the Air Council is now independent of or dependent on the President of the Army Council?

The PRIME MINISTER: I regret that my right hon. Friend did not see his way to put notice of this question down on the Paper. Nothing has arisen in the course of the last two days which was not in existence before, and, therefore, notice might have been given. I will, however, do my best to answer, as far as I can, in the short time at my disposal.

It has already been stated that there is no change whatever in the Air Policy of the Government, which remains the same as it was when my right hon. Friend accepted the position from which, to my regret, he has recently retired.

Maj.-Gen. SEELY: May I ask the Prime Minister how he can say that there is no change in the policy of the Government as announced by the Lord Privy Seal when he said that the Air Ministry must be independent of the Admiralty and the Army Council; further, will he give an opportunity to this House to express its opinion on a change of policy from a decision which was so strongly endorsed by his own colleagues?

The PRIME MINISTER: The Army Council has no control whatever over the Air Force—none. It is perfectly independent of the Army Council.

Lord H. CECIL: Not of the President of the Army Council.

The PRIME MINISTER: That is the Secretary of State for War, who holds both positions. That has been done many times in the history of this country, and it is thought desirable in this case. With regard to the latter part of my right hon. Friend's question, I have already said, in answer to my noble Friend, that if there is a general desire on the part of the House for a discussion of the subject, the Government will find time—(Hon. Members: "No, no!")—but I would point out that the pressure of business is very great, and we do not wish to allocate time unless there is a general desire on the part of hon. Members.

Lord H. CECIL: Will the Prime Minister consider whether a few hours or half a day would not be quite sufficient for this purpose; has not recent experience shown that there is often half a day at the disposal of the Government, if they cannot promise a whole day, and could we not have a friendly arrangement that half a day should be assigned, without any inconvenience to the Government, to give the Government an opportunity of explaining to the House the rather metaphysical obscurities which have arisen?

* * *

Dec. 1st.—The following written answer was given:—

THE R.A.F. IN RUSSIA.

Capt. GUEST, replying to Lt.-Col. Malone, said that 277 aeroplanes had been sent to the forces serving under General Denikin. There were at present 101 Royal Air Force officers and 300 airmen serving with these armies. These troops volunteered for this service, and were to be maintained up to March 31st, 1920. The actual date of their withdrawal had not yet been settled.

ON AIR POLICY.

The following letter written by Major-General J. B. Seely, C.B., D.S.O., appeared in the "Times" newspaper on November 26th—

Sir.—In your leading article of November 13th, headed "The Turning Point in Air Policy," you pointed out that a fundamental issue had been raised. I venture to ask space in your columns in order to define that issue

In his letter to you last week Lord Montagu reminded your readers of the manifold drawbacks which were found in the old system of a divided Air Service, with divided control. Impelled by these reasons, the Government, in November, 1917, introduced the Air Force Bill

The scheme was commended to Parliament and to the country by Ministers who then formed, and still form, part of Mr. Lloyd George's Government, and it is well to recall the reasons then given by those responsible Ministers.

Major Baird introduced the Bill in the House of Commons on November 12th, 1917, and explained, in detail, the objects of the Bill, namely, to create a separate Secretary of State for the Air, a separate Air Council, and a separate Air Service. With regard to the first point he said:—

"The head of the fighting Service will have to discharge various duties now discharged by the Secretary for War, and which cannot be performed under our Constitution except by a Secretary of State. I will give one example. I believe the channel of communication between the Sovereign and an officer who feels himself aggrieved or the officer who has the right of reply is only through a Secretary of State. It would not be satisfactory if an officer of the Air Service felt aggrieved that he should have to apply to his Sovereign through the Secretary of State of another Department. Another reason is to give to the Air Force the same status as we give to the Army and Navy to recognise that the Air is an element in which it is as necessary to make provision for national defence and offence as it is for us to do on sea and land. These are the main reasons why it was thought wise to have a Secretary of State instead of a Minister of lesser rank."

The present Lord Chancellor, then Attorney-General, in supporting the Bill, said:—

"It is the spirit and object of this Bill that the Air Service shall be recognised as an entirely distinguishable Service, that those who are responsible for it shall form a new and important Department answerable to Parliament and responsible for the Service for which it so answers to Parliament, and with complete control unfettered by any other Service over all those who belong to it."

Mr. Bonar Law two days later stated definitely the Government's determination that

"the whole of the Air Services must be treated as one and transferred to the new Department and become a new Service independent of either the Admiralty or the Army Council."

In the House of Lords Lord Crawford, the late Privy Seal, introduced the Bill on November 21st, and emphasised the independence of an Air Service in the following words:—

"Your lordships should remember that it is impossible for our Army to conduct a campaign without the assistance of the Navy, and I do not suppose there has ever been a naval war in which we have been engaged without the Army giving its assistance; but it is quite conceivable that without the help either of the Army or of the Navy a whole campaign could be conducted by aircraft. For these reasons the Government has presented this Bill. It creates an Air Council, an Air Staff, and an Air Force. It makes a distinct Service, which, although closely and indeed intimately connected with the Navy and with the Army, will have its own ideals and its own personality. It will be governed and controlled in a manner specially devised to develop its great and incalculable resources."

And, finally, on the same day, Lord Curzon, then, as now, Leader of the Government in the House of Lords, stated the Government's intentions quite definitely, and, as always, with admirable precision. These were his words:—

"The noble and learned viscount, Lord Haldane, made another observation which was perfectly true. I will give in substance what he said. He told us that this is not only a war measure, but a post-war measure too. Nothing could be more true than that remark. Astonished as we all have been by the scale and magnitude of the development of air service in the war, it ought by no means to be supposed that that development will cease with the war. On the contrary, every one of us knows that there are futures which lie before the Air Service—into which I need not enter to-night—which will render it not only for years to come, but permanently, a necessary part of what I may call our Imperial organisation. This Air Ministry is not wanted for France, Flanders, Salonika, or the East only, but it is required as a part of the material and mechanical resources of the country."

The Bill was unanimously approved by both Houses and duly received the Royal Assent.

Following on this great reform, our air power increased to an astonishing degree on the military side. On the civil side, we obtained the lead over all other countries, a fact which they have been the first to acknowledge. As will be seen from the report of the American Aviation Mission, which was issued as a Parliamentary Paper last month, the Mission definitely recommends the concentration of military, naval, and civil air activities in the United States within the direction of a single Government agency created for the purpose, co-equal in importance with the departments of War, Navy, and Commerce. It is not uninteresting to observe from the same Parliamentary Paper that the United States Secretary for War does not accept the report on behalf of his Department.

In the face of all this, the Prime Minisetr endorses a plan by which the air is placed under the Secretary of State for War. In addition to the fact, to which reference will be made later, that this proceeding is contrary to the declarations of Ministers and to the decision of Parliament, it is in itself a fantastic arrangement. No man can possibly be a responsible Minister at the head of two wholly independent Services, any more than a man can be a captain of two ships or colonel of two battalions. One must be subordinate to the other, and the work of one or both must suffer. In this case, it is the air which suffers now and must suffer still more in the future from the inevitable lack of attention by its responsible head, who already has to fulfil one of the most exacting duties under the Crown. In view of these facts, the Prime Minister's statement, in reply to a question by Lord Hugh Cecil last Thursday, that "there has been no change whatever in the policy of the Government in regard to the Air Force" is inexplicable to the plain man, for it is clearly at variance with the facts. Indeed, to make such a statement is to trifle with the House of Commons and the country. The present system cannot possibly continue, and the Government must frankly adopt one of three alternatives:—

1. To abolish the Air Ministry and again divide up the Air Force between the Navy and the Army, and hand over the immense possibilities of civil aviation to some existing Government Department;
2. To create a Ministry of Defence to which the Ministers of Land, Sea, and Air should be responsible;
3. To free the air entirely from control by the head of another Department.

The first plan would be resisted to the utmost by all those who care for our future position in the air. The second would have the immense advantage of securing a proper co-ordination of our war efforts, but must take long to achieve. The third is to abide by the decision of Parliament and the declarations of Ministers. It is proper now to inquire and to press for an answer to the question whether those Ministers still adhere to their emphatic declarations of two years ago—that there should be a separate Secretary of State, presiding over a separate Air Council, directing a separate Air Service; that the need for a separate Secretary of State was inherent in the scheme, as pointed out by Major Baird; that the new arm of the air was established "for all time" in the words of the present Lord Chancellor, and in the words of the present Foreign Secretary, Lord Curzon; that the creation of the new organisation was not only a war measure, but a post-war measure, too, and "a permanent and necessary part of our Imperial organisation."

If the Prime Minister and his colleagues do not abide by the statements then made, Parliament and the country have a right to be informed what reasons they can give for the reversal of a policy which they then announced as being vital to the safety and well-being of our country and our Empire.

I am, Sir, your obedient servant,
JOHN BERNARD SEELY.

AN INTERESTING CHANGE.

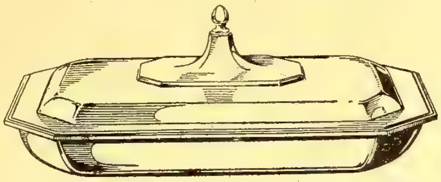
It is interesting to note what one time prominent people in the Aircraft Industry are doing now, and one is glad to hear that Mr. and Mrs. Latimer-Voight—formerly managing directors of the Integral Propeller Company, Ltd., and the Pegasus Aircraft Co., Ltd,—are doing well. They have established the City of London Service Co., Ltd., with offices at 43, Dover Street, W.1., where they are engaged in a large way of business.

They have also opened offices in New York, Brussels, Lisbon, Cologne, Athens, and Constantinople, and are actively engaged in importing and exporting articles, principally food stuffs. Later on, Mr. and Mrs. Latimer-Voight intend establishing branches in all important continental cities. Mr. and Mrs. Voight have as co-directors several men well known in commercial circles, and their prospects of building up a large business are exceedingly bright.

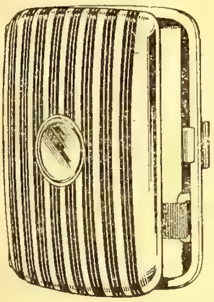
The City of London Service Company would be pleased to hear from firms in the engineering trade who wish to be represented in foreign parts. One of the directors is established in New York, and another is now proceeding to the Balkans. Mr. Voight will shortly be making an extended tour on the Continent.

THE PROCEEDS OF A THÉ DANSANT.

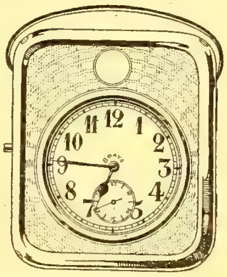
Lady (Milsom) Rees has handed over to the authorities of the Charing Cross Hospital a cheque for £200, being the proceeds of the Thé Dansant given at the London Flying Club, Hendon, on Saturday, November 22nd.



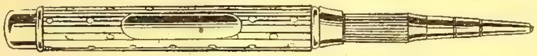
Solid Silver Octagon-shaped Entree Dish with cover. Length 9½ inches, **£20.**



9 ct. Gold Engine-turned Concave Single Row Cigarette Case, **£11 5s.**



8-day Lever Travelling Watch, in case with Engine turned Silver Front, **£6 10s.**



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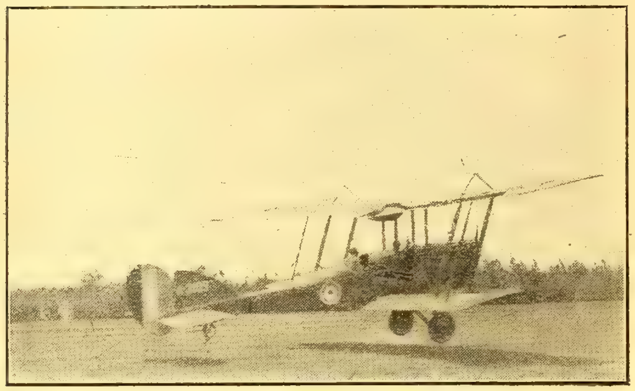
A TRIP TO BANANA SIDING.

News from South Africa travels slowly. A copy of the "S.A. Pictorial," dated June 28th, has been received only recently. In that issue of the weekly paper, there is an account of a flight by Lieut A. H. Gearing (late R.A.F.), which is written as a result of an interview with him by Mr. H. Goldstone.

Lieut. Gearing flew with a passenger in a B.E.2E. biplane from Johannesburg to Banana Siding, 115 miles by rail from Pietersburg. They left Johannesburg on May 20th at 9.30 a.m., and climbing to 3,000 ft., arrived over the Square at Pretoria at 10 a.m. Two pictures of the town from the air were taken from about 2,000 ft.



Just Off.—The start of the Flight.

The remaining 100 odd miles to Pietersburg was flown along the edge of huge slow moving clouds. They arrived over the landing ground near Pietersburg at 12 noon at an altitude of 6,000 ft. After spiralling down to 2,000 ft., a photograph of the landing-place was taken. There is a big lined cross showing the smooth ground on which to land. A landing was made at 12.10 p.m. amidst a great crowd, the whole town having turned out to witness their arrival.

On the following day an exhibition flight was given. People came from miles round to see the first aeroplane which had ever visited those parts.

They left for Banana Siding on the morning of May 22nd. Helped by a strong wind the cross-country journey was made in 40 minutes. Mr. Stamford, the Native Commissioner, met them on arrival. Before they touched the ground not a native was to be seen, but as soon as the machine came to a standstill, the place became alive with Moshlaba's people in all their war-paint.

The natives, who had all been amongst the trees and bushes, headed by their chief, then formed a huge square around the machine.

Lieut. Gearing was treated to the royal salute, "Bayete!" an honour seldom accorded to a white man. For the rest of the day they were fêted and feasted.

The following day was spent in watching the different schools of dancing rehearsing for the big dance. They saw the Circumcision Schools, which had never been visited before by white people.

On May 23rd an exhibition of flying was given. The Chief was invited to go up, but firmly refused.

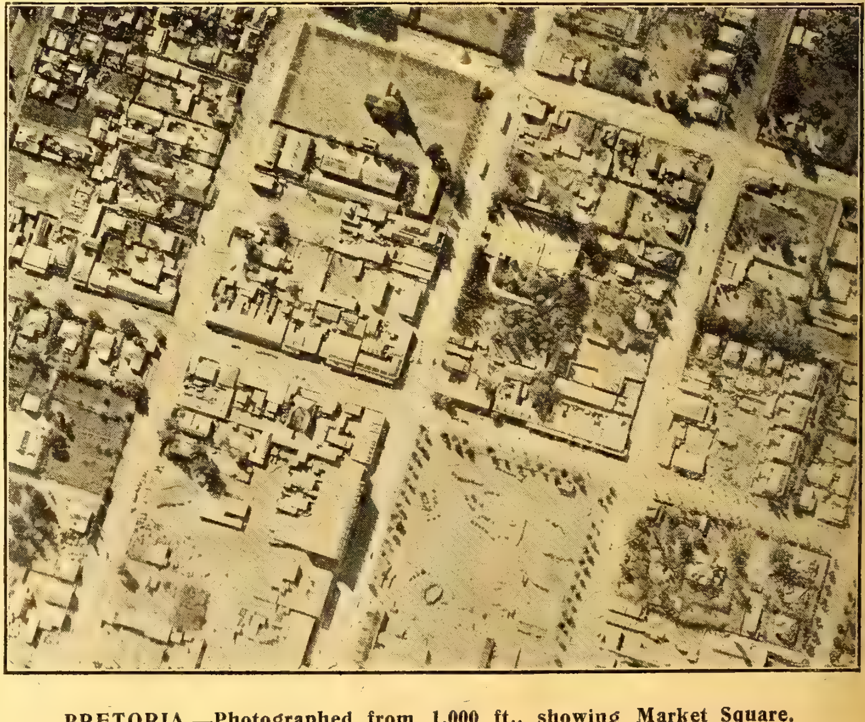
Special trains from Pretoria and Pietersburg arrived on the following morning (Empire Day). Then the real dancing began. After days and days of rehearsing the different schools formed up in a double circle some thousands of yards in diameter. Day and night the tom-toms boomed reverberatingly. A most awe-inspiring sight. The dancers flung themselves into ecstasies of movement for nearly 48 hours. When they became exhausted others replaced them. Their dress was a waving mass of head-dress, armlets, rings and bands of all descriptions. The arms and lower limbs only were visible. They had worn those costumes for three months previous to the day of the dance.

Lieut. Gearing and his pet squirrel which accompanied him on several flights, and has recently died.

Before leaving Banana Siding Lieut. Gearing gave an exhibition of bomb-dropping. He demolished a small kopje in three shots. "King of the Air" was his native name after that. The Chief invited him to a hunt and provided a small army of beaters and attendants.

After exchanging mutual good wishes, a return was made to Pietersburg on May 26th, where a stay was made and exhibition flights given during the Agricultural Show on June 4th and 5th.

The return trip to Johannesburg was made in a non-stop flight of 2 hr. 50 min. Not a single hitch marred the flying during the whole of the trip. Some 1,000 were flown over country never before traversed by air. No difficulty would have been found if a landing had had to be made in any part of the country covered. South Africa is a wonderful country for aviation.



PRETORIA.—Photographed from 1,000 ft., showing Market Square.

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THE 1920 MONACO MEETING.

The following further details of the seaplane competition which is to be held at Monaco next spring are now available.—

The contest is open to machines of all the Allied nationalities, but each machine is to be wholly the product of one nationality.

The pilot must be a citizen of an allied nation and must hold a pilot's certificate of a body affiliated to the Fédération Aeronatique Internationale. He need not be of the same nationality as that of the machine he is to fly.

Machines must make the flights hereafter laid down, carrying a useful load of 400 kgms., in addition to crew, fuel, etc. Any machine carrying a complete wireless outfit independent of the main power plant will be allowed an abatement of 30 kgs. in the load carried—i.e., need carry only 370 kgms.

A start may be made on any day and at any time in the day which may be chosen by the competitor on or after 6 a.m., April 18th, provided that the whole test is completed by 6 p.m on May 2nd.

The first stage shall be Monaco-Corsica (alighting at Ajaccio or Bastia, at the competitor's choice)—Corsica-Bizerta. Distance, 750 kms.

The second stage shall be from Bizerta, round the Bizerta lighthouse, round the lighthouse at Sousse, and back to Bizerta. Distance, 500 kms.

The third stage is, Bizerta-Monaco direct. Distance, 750 kms.

The controls are open on each day from 6 a.m. to 6 p.m., and every complete stage must be made in one day between those hours.

The actual time taken on the last stage only will be taken—this stage being a speed test, and the speed on this stage will be used to discriminate between machines scoring equally on the other two stages for reliability and economy.

Each machine before starting on the trials is required to climb to 2,000 metres in not more than 45 minutes with its full load on board.

The prizes will be :—

1st prize	100,000 francs
2nd prize	30,000 francs
3rd prize	12,000 francs
4th prize	8,000 francs

During the course of the meeting there will be two other contests for seaplanes, each for 5,000 francs prize.

The first is an altitude test, and the second a speed contest. For the latter contest all entrants must qualify by climbing to 3,000 metres in less than one hour.

SPORTING FLYING AND THE ROYAL AERO CLUB.

The following letter has been received from a member of the Royal Aero Club who has long been intimately concerned with aviation. As a business man of proved ability his views are worthy of attention, not only by the Committee of the Royal Aero Club, but also by those of higher intelligence :—

Sir,—Apropos your leader in a recent issue, the contents of which reflect much thought for the powers that be at our clubs :—Perhaps they fed on those thoughts as well as Mr. Frisbee's good things the other day when "sitting" in one of the most comfortable rooms for lunch. I bowled in there myself, not having seen the notice on the door that the Committee was "sitting," because it was natural since they were also lunching, until my "faux pas" was, just in time, pointed out to me.

However, all that is by the way—my point is that if the R.Ae.C. are going to conduct the sporting shows of aviation, which I think they should do, now is the time for them seriously to consider the contests for next year. It would do Aviation a power of good if we had a series of really good sporting and international contests. In fact all contests should be international, because we might learn things from our friends abroad, and if constructors and designers can consider details after, say, Christmas, they can build machines and make plans in good time.

Claude Grahame-White, I understand, was in favour of the London-Paris, or London-Manchester race being not for speed but for general commercial reliability, and with this view I entirely agree, but, on the other hand, if we can have a series of races or competitions next year we can combine both speed and reliability.

I venture to suggest a programme, details as to prizes, distances, etc., to be worked out, of course :—

SPRING.—Two speed races, one for land machines and one for seaplanes, the power to be carried being specified. Two reliability trials over long distances in or round the coast of England

SUMMER.—Two speed races, one over land and one over sea for long distances.
Two reliability trials over land and sea for all countries, and the course embracing France.

AUTUMN.—One each speed race and reliability trial in or around England.

A series of good, sound competitions, such as I have suggested should find a great deal of support if efficiently worked by *our* Club. As you say, there are several people who *can* organise these shows, and the Royal Aero Club, being an impartial body, are the people to do it.

I would like to make one or two suggestions as to the programme set out :—

(1) Although the S.B.A.C. should certainly be consulted, *i.e.*, they should appoint one or two people to discuss details, the details and organisation should be settled by the Club Committee, or some other impartial body.

(2) The members of the Committee deciding the details should be specially selected for the work, and should not necessarily be Committee men appointed by the members of the club to run the club as a club.

(3) Speed races should be for machines carrying a fixed horse-power in one or more engines.

(4) Reliability trials should mean that machines must carry passengers and goods, or passengers only, or goods only, of a specified load. Also landings and stops should form a condition of some contests, and marks should be given for a separate trophy or prize for commercial utility as to arrangements for passengers and cargo.

(5) The amount of monetary prizes should not be the chief aim of competitors, but the contests should be made so attractive that firms winning them will get kudos and publicity helpful to them commercially.

The whole matter is one for long and careful consideration, but as I was hopeful at the beginning of this year that contests would be held, I am still convinced that the holding of contests will do more for Commercial Aviation than anything else.—OBSERVER.

BANKRUPTCY.

George Harold Humphrey, director of public companies, 23, Hangar Lane, Ealing, and late of 4, Ellison Place, Newcastle-on-Tyne.

The first meeting of creditors under a receiving order made against this debtor on his own petition was held on November 27th at the London Bankruptcy Court.

Mr. F. T. Garton, Official Receiver, who presided, said that a statement of the debtor's affairs had been lodged showing gross liabilities £8,500, unsecured £17,770, and contingent debts £58,500, which were not expected to rank for dividend. The assets were valued at £10,065. The debtor had stated that in August, 1914, he and another person formed the Rural Developments Co., Ltd., of which he was appointed managing director. The company was successful until November, 1915, but two years later went into voluntary liquidation. In June, 1914, a company in which he had been interested having given up certain works near Fawkham, Kent, he registered the Fairby Construction Co., Ltd., to work in conjunction with the Rural Developments Co. in building cottages on the Fairby Farm Estate. He was appointed managing director and acted in that capacity until 1917 when he became an ordinary director. In January, 1917, at the suggestion of a representative of Armstrong Whitworth and Co. who promised him contracts, he took the Victoria Works, Newcastle-on-Tyne, and formed John Dawson and Co. (Newcastle-on-Tyne), Ltd., to take over his interest and manufacture aircraft wings. The nominal capital of the company was £10,000. The debtor became managing director and took up the issued capital of £2,100, but later he transferred some of his shares to other persons who became directors. The company was financed by payments made on account of contracts with Armstrong Whitworth and Co. until December, 1917, but afterwards the company made contracts direct with the Government, who paid week by week. The company was very successful until the Armistice, when notice was given terminating the contracts, and differences arose between the company and the Government as to the amount due to the company. Pending the settlement of these differences the debtor endeavoured to sell his interest in another company (Allan Jones and Co. (1918), Ltd.) ; to George Clare and Co., Ltd., and out of the money so raised he paid the accounts and financed John Dawson and Co. On June 4th last the Government settled the claim for £30,000, which was less than the amount expected. The debtor then endeavoured to amalgamate the company with Allan Jones and Co. (1918), Ltd., a company of which he was governing director, which carried out contracts for aircraft parts. In anticipation he guaranteed debts of John Dawson and Co. to the amount of £15,000. Eventually the amalgamation fell through and John Dawson and Co. went into liquidation. The debtor was pressed on his guarantees and decided to file his petition. He attributed his insolvency to the failure of the company, of which he claimed to be a creditor for £10,000.

The creditors appointed Mr. Oliver Sunderland, accountant, as trustee of the debtor's estate. A committee of inspection was also nominated.

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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

War Office, Nov. 24th.

Regular Forces.—Establishments.—R.F.C.—Mil. Wing.—Flying Officer (Observer).—Capt. F. H. Prichard, R.G.A., May 10th, 1915.

Territorial Force.—Yeomanry.—Welsh Horse.—Lt. G. H. Hall, A.F.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in R.A.F., Aug. 1st, and retains the rank of Lt.

Royal Garrison Artillery.—Lt. J. H. Jephson, Suss. R.G.A., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains rank of Lt.

Lt. P. Warburton, E. Rid. R.G.A., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains rank of Lt.

Lt. R S. Aitken, A.F.C., M.C., E. Anglian (Essex) R.G.A., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains rank of Lt.

War Office, Nov. 25th.

Regular Forces.—R.F.C.—Mil. Wing.—Gen. List.—The name of temp. Sec. Lt. (on prob.) Lou Htin. Wah is as now described and not Htin Wah Lou as in "Gazette" of March 1st, 1918.

Oversea Forces.—Br. W.I.R. Service Bns.—Temp. Sec. Lt. A. T. Essex resigns his commn. on appt. to R.A.F., April 1st, 1918.

Territorial Force.—Yeomanry.—Dendighshire.—Capt. J. J. L. Williams, M.C., relinquishes his commn. in the Territorial Force on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

War Office, Nov. 26th.

The following decoration has been awarded by the President of the French Republic for distinguished services rendered during the course of the campaign. The King has given unrestricted permission to wear the decoration in question :—

Croix de Guerre.—Lt. R P Harvey, M.C., 5th Lcrs., attd. R.A.F.

War Office, Nov. 27th.

Regular Forces.—Foot Guards.—G. Gds.—Capt. R. Grey is restored to estabt., Nov. 8th.

Territorial Force.—Yeomanry.—Sussex.—Capt. A. J. L. Scott, C.B., M.C., A.F.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains rank of Capt.

Westmorland and Cumberland.—Capt. B. E. Sutton, O.B.E., D.S.O., M.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

Infantry.—9th Bn., Middx. R.—Lt. O. Stewart, M.C., A.F.C., relinquishes his commn. in the T.F. on appt. to a permanent commn in the R.A.F., Aug. 1st, and retains the rank of Lt.

5th Bn. High. L.I.—Sec. Lt. D. H. Cameron to be Lt., and to remain secd., R.A.F., Sept. 27th.

War Office, Nov. 28th.

REGULAR FORCES.—Infantry.—Wilts R.—Lt. E. W. Leggatt, M.C., attd. R.A.F., resigns his commn., Nov. 29th.

GENERAL RESERVE OF OFFICERS.—Infantry.—Wilts R.—E. W. Leggatt, M.C., late Lt., Wilts R., to be Lt., Nov. 29th, with seny. from July 23rd, 1916.

TERRITORIAL FORCES.—Infantry.—7th Bn., L'pool R.—Lt. R. S. Capon relinquishes his commn. in T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains rank of Lt.

4th Bn., Ches. R.—Capt H. J. Edgar relinquishes his commn. in T.F. on appt. to a permanent commn. in R.A.F., Aug 1st, and retains rank of Capt.

AIR FORCE.

Air Ministry, Nov. 21st.

R.A.F—Flt. Lt. J. C. Brooke, D.S.C. (S.), is granted a permanent commn. in the rank stated, with effect from Aug. 1st

The notification in "Gazette" of Aug. 1st appointing Capt. T. E. Longridge (S.O.) to a permanent commn. is cancelled.

Flying Branch.—Sec. Lt. G. R. Fleming to be Lt., April 25th, 1918.

Pilot Officer R. Nicholson to be Flying Officer, Oct. 1st.

Sec. Lt. E. W. Richardson (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (O.), Aug. 8th, 1918.

P.F.O. W. J. Densham (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (A.), June 13th, 1918 (since killed).

Sqdn. Ldr. M. G. B. Copeman is placed on the h.p. list, Nov. 22nd.

The following relinquish their commns. on ceasing to be empld. :—Sec Lt. W. W. Baker (Sec. Lt., Hamps. R.), Sept. 6th; Lt. A. W. Frazer (Lt., S. Wales Bord.), Oct. 9th (substituted for notification in "Gazette," Sept. 30th); Lt. D. C. Birch (Lt., Northn. R.), Oct. 21st; Capt. J. W. Havers (Lt., R.N.), Sec. Lt. C. A. Howe (Lt., R.A.), Nov. 1st; Capt. N. Grabowsky-Atherstone, A.F.C. (Lt., R.N.), Capt. G. S. Greenland (Lt., R.N.), Nov. 3rd; Lt.-Col. R. C. S. Hunt (Comdr., R.N.), Nov. 4th; Lt.-Col. H. M. Meyler (Capt., Bord. R.), Lt.-Col. H. L. Woodcock (Comdr. R.N.), Nov. 7th; Capt. G. F. M. Warner (Capt., R. Berks R.), Nov. 10th.

Transferred to the unempld. list :—Sec. Lt. S. Marshall, Sec. Lt. J. R. Watt, Feb. 1st; Capt. P. M. Woodland, March 18th; Capt. C. Gilmour, D.S.O., April 7th; Lt. W. C. Strickland, April 15th; Sec. Lt. E. Hughes, Lt. J. A. Van-Tilburg, April 18th; Sec. Lt. E. C. W. Dobbin, Sec. Lt. H. C. W. Dobbin, April 19th; Sec. Lt. W. Wilson, April 25th; Sec. Lt. H. V. Fellowes, May 1st; Lt. W. Gilchrist, May 15th; Lt. L. J. Williams, May 20th; Sec. Lt. W. W. Brown, May 21st (substituted for notification in "Gazette," May 30th); Sec. Lt. J. B. Wood, May 22nd; Lt. N. D. Willis, July 2nd; Sec. Lt. H. E. Wilson, July 12th; Lt. J. N. Bartlett, Aug. 1st; Sec. Lt. L. C. Willcocks, Aug. 16th; Lt. R. B. P. Wilson, Aug. 22nd; Capt. J. S. Williams, M.C., A.F.C., Aug. 29th; Sec. Lt. F. N. Brink, Sec. Lt. L. Futerman, Lt. W. A. Hunter, Sept. 9th; Lt. C. Jackson, Sept. 10th; Capt. G. J. King, Sept. 22nd; Sec. Lt. J. H. Bauer, Sec. Lt. B. L. Ford, Lt. G. W. Welch, Sec. Lt. H. B. Wilson, Sept. 26th; Lt. L. F. Homer, Sec. Lt. A. H. Hull, Sept. 27th; Sec. Lt. J. F. Fraser, Lt. F. R. L. Lazier, Sec. Lt. M. Watt, Sec. Lt. L. Wernher, Lt. T. F. Williams, M.C., Capt. H. A. Wilson, A.F.C., Sept. 28th; Sec. Lt. E. P. Eveleigh, Capt. W R. Walker, Lt. R. W. Welsh, Sec. Lt. M. F. Whitaker, Sept. 29th; Sec. Lt. A. S. Webb, Oct. 6th; Lt. C. G. Ferrell, Lt. (Hon. Capt.) G. M. Smyth, Sec. Lt. E. J. Wing, Oct. 8th; Sec. Lt. J. R. Dean, Sec. Lt. J. F. R. Greef, Sec. Lt. G. Holland, Sec. Lt. H. V. Roberts-Taylor, Lt. R. Wannell, Lt. S. L. Whitehouse, Oct. 9th; Lt F. H. Phillips, Oct. 10th; Sec. Lt. J. W. Paine, Lt. J. F. Rigdeway, D.C.M., Sec. Lt. W. Wilson, Oct. 11th; Lt. J. B. Hall, Oct. 12th; Sec. Lt. K. Preston, Oct. 13th; Sec. Lt. H. J. Armitage, Capt. K. N. Pearson, M.C., Oct. 15th; Sec. Lt. S. A. Brabner, D.F.C., Lt. T. Hayes, A.F.C., Lt. A. Wild, Oct. 16th; Lt. A. Copley, Lt. F. B. Wilson, D.F.C., Oct. 20th; Sec. Lt. R. M. Tate, Oct. 25th; Capt. F. H. Furness-Williams, Lt. L. W. Harrison, Sec. Lt. L. A. West, Oct. 26th; Lt. (Hon. Capt.) H. W. Beck, Lt. A. G. MacGowan, Sec. Lt. S. McKeever, Oct. 27th; Lt. C. A. Moffatt, Oct. 29th; Capt. E M. Pizey, Oct. 30th; Sec. Lt. (Hon. Lt.) G. M. Angier, Sec. Lt. A. C. Maynard, Oct. 31st; Lt. N. H. Astley, Lt. (actg. Capt.) D. F. Lapraik, D.F.C., Nov. 1st; Lt. F. R. Kitton, Sec. Lt. A. R. Macdonald, Lt. E. W. Nicholson, Lt. F. W. Norris, Nov. 3rd; Lt. R. J. Bevington, Sec. Lt. E. K. Dashwood, Sec. Lt. J. H. Nickson, Nov. 4th; Lt. D. R. B. Bentley, Lt. J. E. Bonniksen, Lt. H. E. Clark, D.F.C., Lt. C. R. V. Cook, Lt. W. R. Cowles, Sec. Lt. M. C. Dudding, Lt. L. F. A. Green, Maj. G. A. N. Mitchell, A.F.C., Sec. Lt. R. N. Smith, Nov. 5th; Lt. J. H. Cooper, Nov. 6th; Lt. C. G. Constanduros, Lt M. B. Lewis, Nov. 7th; Sec. Lt. W. Mellor, Sec. Lt. E. L. Mobbs, Nov. 8th; Sec. Lt. A. E. C. Largen, Nov. 9th.

Capt. A. C. Wilson (Lt., 12th Lcrs.) resigns his commn., Nov. 22nd.

Capt. L. H. Wilkins, D.S.C., relinquishes his commn. on account of ill-health contracted on active service and is granted rank of Maj., Nov. 13th.

Lt. R. Main relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Sept. 29th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—W. L. Watt (contracted on active service), March 10th (subtsituted for notification in "Gazette" of Jan. 31st); J. H. F. Baker, Oct. 11th (substituted for notification in "Gazette" of July 22nd).

Lt. A. I. Campbell-Robertson (Lt., Hsrs.) relinquishes his commn. on account of ill-health contracted on active service, Nov. 14th.

Sec. Lt. W. G. Greenaway, M.C., relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Nov. 11th.

Lt H. M. Edwards-Evans, M.C (Lt., R. W. Fus.) resigns his commn., Nov. 22nd.

The notification in "Gazette" of Oct. 24th concerning Lt. R. Main is cancelled.

The notification in "Gazette" of Aug. 19th concerning Lt. E. T. Rogers is cancelled.

Administrative Branch.—Flt. Lt. C. Mason to be Flt. Lt., from (S.O.), Nov. 3rd.

Flying Officer V. Stranders to be Flying Officer, from (S.O.), Sept. 8th (substituted for notification in "Gazette" of Oct. 21st, wherein this officer was shown under "Flying Branch").

Pilot Officer W. Ranger to be Flying Officer, Nov. 3rd.

The following relinquish their commns. on ceasing to be empld. :—Maj. R. Cockburn, O.B.E. (Maj., Suff. R.), Aug. 15th; Lt. R. A. Knott (W.O.R.N.), Oct. 31st; Capt. T. G. Southwood (Lt. R.N.), Nov. 6th; Lt. N. C. Buckton (Lt, E. Lancs. R.), Nov. 11th; Lt. H. Hammond, M.C. (Lt., Dorset R.), Nov. 11th.

Transferred to unempld. list :—Lt. L. N. Waddell, April 10th; Lt W. H. Bragg, April 12th; Sec. Lt. W. W. Archer, April 30th; Lt. T. F. Davis, Aug. 6th; Sec. Lt. J. S. W. Gair, Lt. J. Gibson, Sept. 9th; Sec. Lt. O. W. Froom, Sept. 28th; Lt. (Hon. Capt.) A. Hay, Sec. Lt A. Scott, Oct. 10th; Sec. Lt. S. A. Hipple, Oct. 13th; Lt. (actg. Maj.) G. B. Redgrave, Oct. 16th; Sec. Lt. W. A. Wright, Oct. 18th; Sec. Lt. S. J. Swayne, Oct. 27th; Sec. Lt. A. O. Fraser, Sec Lt (Hon. Capt.) H. E. Goddard, Lt. P. F. H. Greville-Smith, Lt. E. Hilary, Sec. Lt. (Hon. Lt.) G. E. L. Woodhouse, Nov. 1st; Lt. S. B. Hicks, Lt. J. N. Wilkinson, Nov. 4th; Lt. B. F. Bond, Capt. A. E. Bowen, Lt. H. Clarke, Capt. A. E. K. Davies-Bunton, Nov. 5th; Sec. Lt. W. J. Begley, Lt. C. T. L. Bowley, Lt. T. S. Cowperthawaite, Capt. H. C. Jones, Nov. 17th; Sec. Lt. (Hon. Lt.) J Parker, Nov. 11th; Sec. Lt. M. W. Binns, Sec. Lt. S. O. Clark, Nov. 13th; Lt. E. E. H. Hamilton-Jackson, Nov. 14th.

Technical Branch.—Flying Officers to be Flying Officers, Grade (B), from (S.O). :—J. L. Denman, Oct. 18th; E. H. Eldridge, Nov. 7th (substituted for notification in "Gazette," Nov. 18th).

Sec. Lts. to be Lts. :—R. B. Dormer, April 2nd, 1918; W. H. Hoile, Jan. 12th (substituted for notification in "Gazette," July 29th).

Pilot Officers to be Flying Officers, without pay and allces. of that rank :—G. N. Coward, P. FitzPatrick, Oct. 1st.

Sec. Lt. J. C. Howard (Sec. Lt., Lab. Corps) relinquishes his commn. on ceasing to be empld., Jan. 21st.

Transferred to unempld. list :—Sec. Lt. (Hon. Lt.) T. Scott (D. of Corn. L.I., T.F.), Feb. 4th; Capt. M. J. Astle, July 1st; Lt. A. H. Meldrum, Lt. E. F. L. Taylor, Sec. Lt. E. Volk, Aug. 31st; Sec. Lt. W. B. Smellie, Sept. 7th; Capt. G. H. Major, Sept. 24th; Sec. Lt. W. P. Williams, Sept. 28th; Lt. A. L. Wilson, Sept. 29th; Capt. F. H. Taylor, Oct. 8th; Lt. W. S. Harms, Oct. 9th; Lt. F. W. Partington, Lt. A. W. O'Q. Shire, Oct. 10th; Sec. Lt. J. G. Wright, Oct. 11th; Lt. R. R. Richards, Lt. A. R. Thomson, Oct. 14th; Sec. Lt. F. Wombell, Oct. 15th; Sec. Lt. (Hon. Lt.) C. A. Assiter, Oct. 17th; Capt F. V. W. Cooke, Oct. 18th; Lt. D. A. Parker, Oct 22nd; Sec. Lt. E Hague, Oct. 23rd; Lt. C. L. Taylor, Oct. 25th; Sec. Lt. H. Cantrill, Oct. 26th; Lt. C. N. Henderson, Oct. 28th; Lt. J. F. J. Perry, Oct 30th; Sec. Lt. J. H. Hankins, Nov. 1st; Sec. Lt. G. Dunn, Nov. 2nd; Lt. E. W. Brooks, Sec. Lt. V. H. Lurie, Nov. 3rd: Sec. Lt. D. F. Bowering, Lt. G. F. Kite, Sec Lt. L. G. Morris, Sec. Lt. J. Weeks, Nov. 4th; Capt. A. U. Hansford, M.B.E., Sec. Lt. C. C. Lindsay, Nov. 5th; Lt. H. V. Bevis, Sec. Lt. (Hon. Lt.) W. N. M. Dunkley, Sec. Lt. (Hon. Lt.) W. H. O. Jones, Sec. Lt. H. W. Mapley, Maj. S. P. V. Phillips, Nov. 6th; Lt. A. V. Baker, Nov. 7th; Lt. S. W. Davis, Nov. 8th; Maj. R. F. Le Bailly, Nov. 9th.

Sec. Lt. (Hon. Lt.) F. M. V. Earle relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, June 25th (substituted for notification in "Gazette," Feb. 28th).

Sec. Lt. W. G. Shipwright relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 14th.

The initials of Lt G. G. Bailey, D.F.C., are as now described, and not G. C. as stated in "Gazette," Oct. 24th.

The initials of Sec. Lt. E. F. Thorpe are as now described and not E. J. as stated in "Gazette" of Sept. 12th.

The notification in "Gazette" of Sept. 26th concerning A. Clayton is cancelled.

Medical Branch.—Transferred to the unempld. list :—Capt. L. A. Walker, Sept. 20th; Capt. C. P. C. Sargent, Oct. 8th; Capt. E. D. Granger, Nov. 5th.

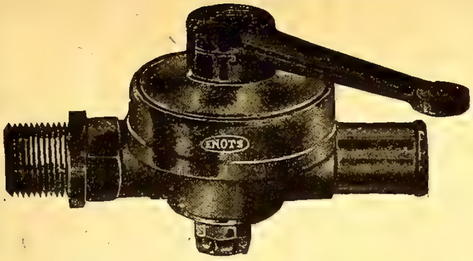
Dental Branch.—Capt. S. G. Smith is transferred to the unempld list, Sept. 28th (substituted for notification in "Gazette" of Oct. 31st, wherein this officer was shown under Medical Branch).

Women's Royal Air Force.—To be actg. Deputy Administrator :—Asst Administrator E. M. Trethowan, Nov. 1st.

Asst. Administrator (actg. Deputy Administrator) M. E. Hamilton reverts to substantive rank on ceasing to be empld. as Deputy Administrator, Aug. 20th.

The notification in "Gazette" of Oct. 28th regarding Asst. Administrator (actg. Deputy Administrator) V. M. Orrock is cancelled.

The following officers relinquish their appts. at their own request :—



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Asst. Administrators.—A. M. Cadogan, Oct. 16th; C. H. Peake (actg. Deputy Administrator), Oct. 22nd; Mrs. E. Stephens, Oct. 30th.

The following officers relinquish their appts. on completion of service:—Administrators.—E. Thomson, M.B.E., Oct. 14th; Mrs. L. B. Anderson, Oct. 15th; M. S. Frood (D.A.C.), M.B.E., Oct. 18th; C. F. I. Noel (actg. Asst. Commdt. II.), M.B.E., Oct. 20th; H. H. Montefiore, Mrs. G. B. Carruthers, Nov. 5th.

Deputy Administrators.—C. M. Scott-Holmes, Sept. 22nd; A. O'Donoghue, Sept. 23rd; Mrs. N. Richards, Oct. 9th; Mrs. E. V. F. Fordham, Oct. 14th; V. Armstrong, W. C. Woodstock, V. St. L. Winter, E. J. Scott, Oct. 15th; D. C. Muir (actg. Adm., D.A.C.), M.B.E., Oct. 16th; M. M. Gow, Oct. 17th; P. M. Ralston, Oct. 18th; Mrs. A. Marshall, Oct. 22nd; S. I. Foy, Oct. 24th; D. M. Fenn (actg. Adm., D.A.C.), J. McOlvin, Oct. 25th; Mrs. E. S. Stephens, Oct. 30th; M. Carnley, M.B.E., Oct. 31st; A. G. Moran, Nov. 4th; B. D. F. Couper, Nov. 5th; M. A. Thomson (actg. Asst. Comdt. II.), M.B.E., D. L. Reed, M. Allen, A. E. M. Brook-Taylor, Nov. 8th; P. E. Stapleton-Cotton (actg. Asst. Comdt. II.), Nov. 9th.

Asst. Administrators.—J. R. Anderson, Sept. 15th; K. Ross-Hume, Sept. 18th; E. A. A. Summerhayes, Sept. 22nd; M. V. Cox, Oct. 9th; H. M. Culley, D. E. Cooper, L. Shortridge, Oct. 10th; M. W. Hamilton (actg. Dep. Adm.), E. Gane, Oct 11th; E. M. M. Glenny, Oct. 13th; K. F. Butler, S. W. Lucas, J. G. Foy, Oct. 14th; M. M. Radcliffe, E. A. Mallabone, Oct. 15th; M. E. Johnston, Mrs. E. C. B. Herbert-Hall (actg. Dep. Adm.), G. L. Howard-White, M. Higginbottom (actg. Dep. Adm.), Oct. 16th; C. K. H. Hood, Oct. 17th; A. McNaughton, E. C. Brown, Oct. 22nd; S. Bussell, M. S. Stevenson, Oct. 24th; M. Harris, Oct. 25th; D. B. Fletcher, Oct. 28th; A. A. Anderson, Oct. 28th; Mrs. E. B. Mullen (actg. Dep. Adm.), L. C. Nutt, Oct. 30th; L. M. Wood, Oct. 31st; I. Huleatt (actg. Dep. Adm.), N. Williams, Nov. 1st; N. Lee (actg. Dep. Adm.), M. H. Mackay (actg. Adm.), Mrs. C. E. I. Edwards, Nov. 4th; Mrs. W. M. Coyle, Nov. 5th; A. Cobbold, K. Hargreaves (actg. Dep. Adm.), A. L. Cooper (actg. Dep. Adm.), Nov. 6th; V. B. Rhys-Davids, K. M. Wynn-Werninck (actg. Dep Adm.), Nov. 8th; P. Manning, Nov. 13th.

Memorandum.—The following Proby. Flt. Officers are granted hon. commns. as Sec. Lts.:—K. N. Knapp, Jan. 21st; R. S. Hudson, Jan. 26th.

The following Cadets are granted hon. commns. as Sec. Lts.:—5/172526 N. Smith, April 25th; 117094 J. W. K. Jackson, July 1st; 9489 W. J. Williams, Aug. 23rd.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—R. W. Everett, M.B.E., July 31st; (Hon. Capt.) E. Fairbrother, Aug. 31st; W. R. H. Arnold, J. H. Ekins, F. W. Jecock, H. R. Knight, A. McIsaac, S. J. Norton, R. A. Pomphrett, A. R. Woods, Sept. 16th.

Sec. Lt. J. S. Larner is transferred to the unempld. list, Nov. 5th.

Air Ministry, November 25th.

R.A.F.—Flight Lt. D. F. Massy (T.) is granted a permanent commn. in the rank stated, with effect from Aug. 1st.

The notification in "Gazette" of Oct. 28th apptg Lt. R. S. Sorley, D.S.C. (A.), to a permanent commn. is cancelled.

The notification in the "Gazette" of Oct 28th apptg. the following officers to permanent commns. is cancelled:—Sqdn. Ldr. M. E. A. Wright (A.P. (T.)); Flying Officer J. L. Findlay, M.C. (A.).

Flying Branch.—Capt. G. M. Turnbull, A.F.C., is graded for purposes of pay and allowance as Maj. whilst empld. as Maj. (A.), from May 1st to June 30th.

Capt. W. Lambert is graded for purposes of pay and allowances as Maj. whilst empld. as Maj. (K.B.), from May 1st to July 9th.

Sec. Lts. to be Lts.:—H. R. Watterson, May 1st, 1918 (since demobilised); T. H. Langrishe, May 10th, 1918; W. M. Brewer, Jan. 7th; G. S. Smith, March 26th; R. C. Morris, June 6th (since demobilised).

The following relinquish their commns. on ceasing to be empld.:—Lt. T. N. Robinson (Lt., R. Art.), Feb. 11th; Lt. J. F. Gillam (Lt., R.F.A.), Aug. 20th; Sec. Lt. (Hon. Capt.) C. J. P. Copner (Capt., S. Wales Bord.), Nov. 1st; Capt. G. T. Porter (Capt., R.G.A.), Sec. Lt. (Hon. Lt.) H. A. Deakin (Lt., S. Staffs. R.), Nov. 3rd; Lt. F. L. Harding (Lt., Som. L.I.), Nov. 4th; Lt. S. D. Lavelle (Lt., Manch. R.), Nov. 7th; Maj. T. K. Elmsley (Lt.-Comdr., R.N.), Nov. 8th; Sec. Lt. (Hon Lt.) C. W. F. Busk (Lt., R.E.), Nov. 12th

Transferred to unempld. list:—Sec. Lt. H. Cunningham, Jan. 18th; Lt. H. W. Steele, Jan. 23rd; Sec. Lt. R. G. Consterdine, Sec. Lt. V. M. De Long, Sec. Lt. J. I. McNeil, Sec. Lt. D. X. Marks, Sec. Lt. G. L. Mitchell, Sec. Lt. S. H. Phillips, Sec. Lt. H. G. Pitt, Sec. Lt. R. W. Robertson, Sec. Lt. W. C. Soresby, Sec. Lt. G. W. Stewart, Sec. Lt. B. J. Svenceski, Sec. Lt. C. L. Tait, Feb. 1st; Sec. Lt. F. Roy, Feb. 10th; Sec. Lt. A. J. Cobham, Feb. 20th; Lt. James Gray, Feb. 28th; Sec. Lt. T. E. Seferth, March 6th; Lt. H. De C. McDiarmid, March 7th; Lt. R. Duncanson, March 11th; Lt. G. S. Rogers, March 16th; Capt. W. H. Davies, March 18th; Sec Lt. H. W. Orvis, Sec. Lt. W. Wallace, April 1st; Sec. Lt. C. S. Hill, April 8th (substituted for notification in "Gazette," May 2nd); Lt. E. C. J. McCracken, April 11th; Sec. Lt. R. S. Lipsett, April 17th; Capt. R. E. Carroll, Lt. W. A. N. Davern, Lt. (actg. Capt.) W. A. Leslie, D.F.C., Sec. Lt. L. E. Stone, Lt. A. J. Wright, M.C., April 19th; Sec. Lt. (Hon. Lt.) W. Taylor, April 23rd; Lt. F. M. Nash, April 30th; Lt. H. S. Pelton, May 1st; Lt. F. G. Sutton, May 2nd; Capt A. T. N. Cowley, May 6th; Sec. Lt. H. F. Binstead, May 8th; Lt F. G. Powell, May 12th; Lt. R. M. Smith, May 16th; Lt. G. R. Wight, May 22nd; Sec. Lt. P. Lavery, May 24th; Sec. Lt. E. D. Deck, May 31st; Lt. J. W. Chapman, June 12th; Sec. Lt. J. B. Wilson, June 14th; Lt. E. A. Coghlan, June 28th (substituted for notification in "Gazette," June 27th); Lt. R. S. McLatchy, June 30th; Sec. Lt. H. W. Sutton, July 1st; Sec. Lt. F. R. Frizzle, July 11th; Sec. Lt. N. Ferrell, Juy 12th; Sec. Lt. A. G. West, July 16th; Lt. J. B. Drummond, Aug. 14th; Sec Lt. W. Foster, Lt. W. E. G. Mann, D.F.C., Aug. 27th; Lt. H. S Round, Sept. 2nd; Lt. A. L. Watkins, Sept. 4th; Lt. M. M. Sisely, Sept. 9th; Lt. C. N. L. Lomax, Sept. 10th; Lt. A. F. Fynmore, Sept. 11th; Capt. A. R. Henley, Sept. 15th; Lt. V. G. Record, Sept. 16th (substituted for notification in "Gazette," Sept. 23rd, wherein this officer's rank was shown as Sec. Lt.); Sec. Lt. J. D. Fullerton, Sept. 17th; Sec. Lt H. C. Harris, Sept. 20th; Sec. Lt. W. Goldbeck, Sept. 26th; Lt. W. Lamont, Sec. Lt. J. Y. Moggridge, Sept. 27th; Lt. R. A. McLaren, Sept 28th; Capt. H. H. Gonyon, D.F.C., Lt. S. Grossberg, Sec Lt. J. F. Lenahan, Sept. 29th; Sec. Lt. (Hon Lt.) G. S. Astley, Lt. W. B. Clark, Lt. F. K. Crosbe-Choppin, Lt. D. W. Geerdts, Sec. Lt. R. J. Green, Lt. A. Morgan, Oct. 9th; Sec. Lt. L. W. J. Lawson, Lt. E. W. R. Matthews, Lt. L. H. McRober, Oct. 10th; Sec. Lt. H. N. Bradbrooke, Sec. Lt. B. Buckle, Sec. Lt. J. E. Knaggs, Oct. 11th; Capt. S J. Sibley, Oct. 12th; Sec. Lt. A. R. Murray, Oct. 13th; Lt. F. W. Michell, Oct. 14th; Lt. R. R. Harkus, M.C., Lt. W. J. Lindop, Oct. 16th; Sec. Lt. W. Dalgleish, Lt. E. T. Hunt, Oct. 17th; Sec. Lt. R. Brodie, Sec. Lt. W. G. Rich, Oct. 21st; Sec. Lt. A. E. Warnes, Oct. 22nd; Sec. Lt. G. V. Gordon, Lt. E. P. Mackay, Sec. Lt. D. G. Wassell, Oct. 23rd; Sec. Lt. D. R. Bradley, Sec. Lt. A. M. Broad, Oct. 25th; Sec. Lt. A. Brandrick, Sec. Lt. C. J. Lewin, Oct. 27th; Lt. R. Longman, Lt. J Toulmin, Nov. 1st; Lt. R. I. Mansel-Edwards, Lt. W. W. Saunders, Capt L. S. Weedon, Nov. 3rd; Sec. Lt. W. C. Brudenell, Nov. 4th; Lt. A. A. MacArthur, Lt. E. R. MacDonald, Capt. P. J. H. Sumner, Nov. 5th; Sec. Lt. A. H. Ashton, Sec. Lt. J. B. Elton, Lt. J. P. Gibbon, Lt. W. H. Jordan, Lt. S. C. Lockwood, Lt. P. T. A. Reveley, Capt. F. E. Rogers, Nov. 7th; Lt. A. L. J. Bulley, Sec. Lt. (Hon. Lt.) E. Lawson, Capt. G. F. Meager, A.F.C., Lt. J. P. Morkham, Sec. Lt. T. Railton, Sec. Lt. W. M. Tait, Capt. S. E. Taylor, D.S.C., Nov. 8th; Lt. W. F. Evans, D.C.M., Lt. H de V. Leigh, D.F.C., Nov. 9th; Capt. E. H. Bryant, Lt. B. Rennert, Sec. Lt. F. Towler, Nov. 10th; Lt. C. W. T. Colman, Sec. Lt. D. J. Lewis, Sec. Lt. J. P. O'Rourke, Nov. 11th; Sec. Lt. C. H. Abbey, Lt. G. L. Gould, Lt. A. E. Masters, Nov. 12th; Lt. G. C. Grundy, Nov. 13th, Lt. W. A. Reeves, Lt. G. L. Stedman, Nov. 16th; Sec. Lt. (actg Lt.) W. W. Langdon, Nov. 20th; Sec. Lt. F. Buchanan, Nov. 24th; Lt. C. G. Imeretinsky reigns his commn., April 9th.

The following Lts. relinquish their commns. on account of ill-health caused by wounds, and are permitted to retain their rank:—F. H. Hall, June 25th (substituted for notification in "Gazette" of Dec. 20th, 1918); E. G. Weller, Nov. 15th; C. B. Bateman, J. J. Hickey, Nov. 19th.

The following Sec. Lts relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—E. L. Allanson, C. B. Smith, Nov. 18th; R. I. Jenkinson, Nov. 19th.

The surname of W. F. Grainger is as now described, and not "Granger," as stated in "Gazette" of Oct. 3rd.

The surname of Sec. Lt. J. E. Quin is as now described, and not "Quinn," as stated in "Gazette" of Dec. 10th, 1918.

The notification in "Gazette" of Feb. 28th concerning Lt. G. R. Smith (Can. M.G.C.) is cancelled.

The notification in "Gazette" of April 1st concerning Lt. T. N. Robinson is cancelled.

The notification in "Gazette" of Oct. 28th concerning Lt. R. Jones is cancelled.

The notification in "Gazette" of Nov. 4th concerning Lt. E. B. Jones is cancelled.

Administrative Branch.—Flying Officer J. M. Dandy to be Flying Officer, from (A.), Sept. 1st (substituted for notification in "Gazette" of Oct. 3rd).

Lt (Hon. Capt.) A. A. J. Poole to be Lt. (Hon. Capt.) ("A. and S."), Jan. 6th (substituted for notification in "Gazette" of April 4th)

Pilot Officer G. E. Pyne to be Flying Officer, Nov. 10th.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. E. G. Masson (Lt., Military Accountant Officer), June 12th; Lt. (Hon. Capt.) E. V. Tarrant, D.C.M. (Qrmr. and Capt., Hamp. R.), Sept. 25th; Sec Lt. J. E. Slattery (Sec. Lt., Lan. Fus.), Nov. 8th; Sec. Lt. F. C. Peacock, M.C. (Lt., R.F.A.), Nov. 10th; Lt. A. S. Dark (Lt., half-pay list), Nov. 17th.

Transferred to the unempld. list:—Sec. Lt. H. C. Stevens, March 9th; Sec. Lt. W. W. McBain, March 12th; Sec. Lt. (Hon. Lt.) J. Fisher, April 20th; Sec. Lt. E. J. B. Carpenter, April 22nd; Lt. C. Wilderspin, May 20th; Lt. C. P. Browne, June 20th; Sec. Lt. B. J. C. Hamm, Sept. 12th; Sec. Lt. G A. Richardson, Sept. 25th; Capt. N. Robertson, Sept. 28th; Sec. Lt. J. E. Forbes, Lt. J. M. MacLennan, D.F.C., Sept. 29th; Lt. B. H. Caswell, Oct. 9th; Sec. Lt. (Hon. Lt.) W. Miller, D.F.C., Lt. G. Rainbow, Oct. 10th; Sec. Lt. (Hon. Lt.) E. J. Leedle, Oct. 16th; Sec. Lt. E. P. Gates, Oct. 21st; Sec. Lt. H. B. Shaw, Oct. 23rd; Lt. (actg. Capt.) G. Norrington, Oct. 28th; Sec. Lt. T J. McL. Davies, Oct. 29th; Capt. H. C. Waghorn, M.B.E., Oct. 31st; Lt. A. Bevan, Sec. Lt. A. B. Henderson, Lt. H. A. Zinn, Nov. 4th; Lt. C. E. B. Binns, Lt. G. W. Riley, Lt. (Hon. Capt.) B. T. Whittaker, Nov. 5th; Lt. G. Lyon, Sec. Lt. P. E. Perry, Nov. 6th; Sec. Lt. (Hon. Lt.) H. O. Newland, Sec. Lt. S. Tew, Capt. W. H. Wynnsford, Nov. 7th; Sec. Lt. E. Bushell, Nov. 8th; Sec. Lt. P. Brown, Nov. 10th; Lt. R. O. Phillips, Nov. 11th; Lt. L. Cable, Nov. 13th; Lt. (Hon. Capt.) J. F. Shaw, Nov. 24th; Lt. (actg. Capt.) E. Burney, M.C., Nov. 25th; Lt. W. R. Collins, Nov. 29th.

The following Capts relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—A. D. Dawson (Capt., R.F.A., T.F.), Nov. 13th; G. M. Gordon, Nov. 19th.

Lt. M. Tarbet relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Nov. 18th.

The notification in "Gazette," Nov. 14th, concerning Capt. G. A. Revington (Lt., R.N.) is cancelled.

The notification in "Gazette," July 2nd, 1918, concerning Sec. Lt. (Hon. Lt.) J. W. Harling is cancelled.

The notification in "Gazette," Oct. 21st, concerning Lt. F. W. Dogherty is cancelled.

Technical Branch.—Sec. Lt. H. L. Bown is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A), May 1st.

Sec. Lts. to be Lts.:—M. A. Doyle, April 2nd, 1918 (substituted for notification in "Gazette," March 7th); H. T. H. Copeland, March 4th (substituted for notification in "Gazette," July 29th).

Sec. Lt. (Hon. Lt.) R. O. C. Bush to be Lt., April 2nd, 1918, without the pay and allowances of that rank prior to Aug. 20th, 1918.

Pilot Officer R. West to be Flying Officer, without the pay and allowances of that rank, Oct. 1st.

Sec. Lt. H. M. Lonsdale to be Sec. Lt. (Grade B), from (Ad.), July 13th, 1918.

Capt. H. W. M Paul, O.B.E., M.C. (Capt., Middx. R.), relinquishes his commn. on ceasing to be empld., Nov. 1st (substituted for notification in "Gazette," Nov. 7th).

Maj. S. Lambert is temporarily transferred to unempld. list, May 17th to June 3rd.

Transferred to the unempld. list:—Sec. Lt. (Hon. Lt.) T. W. Webb, April 14th; Sec. Lt. A. J. Maurer, April 19th; Sec. Lt. F. Walters, Sept. 20th; Lt. A. Patterson, Sept. 22nd; Sec. Lt. J. Dudley, Sept. 25th; Lt. (Hon. Maj.) W. R. Bernard, Sept. 26th; Capt. J. G. Hope, Sept. 30th; Lt. T. H. Maltby, Oct. 7th; Lt. F. H. Beer, Sec. Lt. P. Haselock, Oct. 9th; Sec. Lt. A. Milne, Oct. 13th; Capt. M. J. H. Molyneux, Lt. G. J. Williams, Oct. 14th; Lt. A. G. Edwards, Oct. 16th; Sec. Lt. B. H. W. Hatch, Oct. 17th; Lt. H. W. Taylor, Oct. 21st; Sec. Lt. L. F. Bennett, Oct. 22nd; Sec. Lt. W. Dentith, Oct. 27th; Sec. Lt. R. A. Bell, Oct. 29th; Lt. A. E Burton, Oct. 30th; Capt. H. E. Maskew, Oct. 31st; Lt. R. N. Corah, Nov. 1st; Sec. Lt. (Hon Lt.) D. Armitage, Nov. 2nd; Lt. H. D. Patterson, Nov. 4th; Lt. A. Smellie, Nov. 6th; Lt. B. Benson, Lt W. E. Gower, M.C., Lt. C. Mansfield, Lt. E. T. Mitchell, Nov. 7th; Sec. Lt. L. Willment, Nov. 8th; Lt W. Batcheldor, Lt. E. Trist, M.B.E., Nov. 9th, 1899; Sec. Lt. (Hon. Lt.) T. Morrison, Lt. H. C. Reade, Nov. 10th; Capt. W. H. Miles, Lt. D. Rintoul, Nov. 12th; Sec. Lt. A. G. Edmonds, Nov. 13th; Lt. E. A. Moran-Smith, Nov. 14th; Lt. W. A. Allan, Lt. (actg. Capt.) P. Burke, Lt. J. Mytton, Nov. 15th; Lt. J. A. V. Welsh, Nov. 16th; Lt. K. Arnold, Nov. 18th.

The following Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—H. G. Cooper, Nov. 14th; J. R. Howenden, L. F. Jones, Nov. 19th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. S. Forde, Sept. 30th (substituted for notification in "Gazette," Sept. 30th); (Hon. Lt.) C. D.

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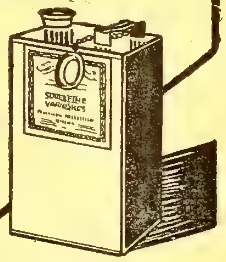

Jackman (Lt., Norf. R.), contracted on active service, Nov. 11th; J. D. Graham, Nov. 19th.

The surname of Flt. Lt. (actg. Sqdn. Ldr.) J. Curtis Watson is as now described, and not "J. Curtis," as stated in "Gazette," Nov. 7th.

The initial of Sec. Lt. F. Woombell is as now described, and not "A.," as stated in "Gazette," May 27th.

The notification in "Gazette," May 27th, concerning Sec. Lt. H. L. Brown is cancelled.

Medical Branch.—Transferred to the unempld. list:—Capt. M. J. Whelton, Nov. 5th; Capt. A. W. Weston, Nov. 9th.

Dental Branch.—Transferred to the unempld. list:—Lt. G. O. Roper, Feb. 19th (substituted for notification in "Gazette," July 1st, wherein this officer was shown under Medical Branch); Capt. F. R. McCambley, Oct. 25th; Lt. N. A. Goudge, Nov. 11th.

Memoranda.—109538 Sjt. P. A. McGuinness, D.F.M., is granted a temp. commn. as Sec. Lt., May 3rd.

Sec. Lt. P. A. McGuinness, D.F.M., is transferred to the unempld. list, May 3rd.

The following Cadets are granted hon. commns. as Sec. Lts.:—180921 F. H. E. Pitcher, Jan. 6th; 181980 G. T. O'Callaghan, Jan. 13th; 544121 R. C. Hawkins, Jan. 22nd; 175740 E. W. Fryer, Feb. 27th; 224981 F. C. Mathias, March 4th; 93114 C. J. Watts-Read, March 20th; 318462 S. Bell, 631966 E. H. Welford, April 24th; 110978 A. McLaren, May 4th; 317937 J. W. R. Lamb, M.M., May 27th; 563410 G. H. Walton, Nov. 14th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—H. J. Foxell, L. J. Hill, A. W. Holden, R. Ross, Sept. 16th; (Hon. Capt.) G. R. Groves, Oct 16th; D. M. Anderson, Nov. 8th.

The following relinquish their commns. on ceasing to be empld.:—Maj. C. S. McNabb (Capt., Cam'n Highrs.), Capt. T. E. Withington, A.F.C. (Capt., Oxf and Bucks. L.I.), Nov. 10th.

Transferred to the unempld. list:—Capt. H. Cumming, O.B.E., from (S.O.), Capt. A. W. Farrer, from (S.O.), Sec. Lt. A. O. M. Limb, from (S.O.), Nov. 1st; Capt. R. D. Seddon, from (S.O.), Nov. 7th; Lt. J. G. N. Clift, from (S.O.), Nov. 11th; Capt. E. E. W. Butt, from (S.O.), Nov. 15th.

The notification in the "Gazette" of July 25th concerning Prob. Flt. Officer W. E. W. Holder is cancelled.

The notification in the "Gazette" of Sept. 23rd concerning Sec. Lt. R. D. McEwen Hart is cancelled.

Air Ministry, Nov. 28th.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Nov. 28th (except where otherwise stated). They will retain their seniority in the substantive rank last held by them prior to the grant of the short service commn., except that officers gazetted to the rank lower than their previous substantive rank will be placed at the head of the list of officers of the rank to which they are now gazetted, and will retain seniority relative to each other in accordance with their previous position on on the gradation list.

In the case of officers now gazetted Flying Officer from Pilot Officer, seniority will date from the date of the "Gazette."

Sqdn. Ldr.—J. W. Cordingley, O.B.E. (S.O.).

Flt. Lts.—G. M. Boumphrey (A.), H. H. Clarke (S.O.), E. S. Goodwin, A.F.C. (S.), R. A. W. de H. Haig (A.), L. V. Hirst (A.), A. J. Nightingale (A.), H. L. Nunn, D.S.C., D.F.C. (S.), R. L. Stephenson-Peach, M.B.E. (T.).

Flying Officers (from Flt. Lts.).—R. S. Sorley, D.S.C. (A.), with effect from Nov. 27th; W. V. Simons (S.).

Flying Officers.—D. P. Cameron, M.B.E. (A.), O. W. Clapp (T.), L. A. W. Deane (A.), J. L. Findlay, M.C. (A.), B. Holding (A.), W. R. Rogers (Ad.), E. A. Scales (Ad.).

Observer Officer.—J. S. C. Robinson.

Flying Officers (from Pilot Officers).—A. W. C. Bayes (A.), S. McKeever (A.), G. H. Winckworth (T.).

The notifications appearing in "Gazettes" of the dates indicated below, appointing the following officers to short service commns., are cancelled:—Flt. Lt. B. E. Catchpole, R.C., D.F.C. (A.), Flying Officer G. A. F. Gibson (T.), Sept. 16th; Flt. Lt. E. F. Turner (T.), Flying Officer R. Clowes (A.), Flying Officer A. G. Lamplugh (A.), Flying Officer W. E. Lowrie (T.), Flying Officer J. Owen, D.F.C., M.M. (A.), Flying Officer J. W. Pinder, D.F.C. (A.), Flying Officer A. R. Thompson (T.), Oct. 24th; Flt. Lt. B. D. Hobbs, D.S.O., D.S.C. (S.), Nov. 11th.

The surname of Flying Officer A. C. Townend, A.F.C. (A.), is as now described, not "Townsend" as stated in "Gazette" of Oct. 24th.

Sqdn. Ldr. J. C. M. Lowe (T.) is granted a short service commn. with effect from Aug. 1st, not Nov. 11th, as stated in "Gazette" of the latter date, amended by "Gazette" of Nov. 14th.

Flying Officer L. Hamilton, D.F.C. (A.) relinquishes his temp. and short service commn. at his own request, Nov. 28th.

Permanent Commissions.—The following promotions are made:—Group Capts.—Wing Comdr. R. Gordon, C.M.G., D.S.O., Wing Comdr. F. V. Holt, C.M.G., D.S.O., Nov. 1st.

Wing Comdrs.—Sqdn. Ldr. L. A. Strange, D.S.O., M.C., D.F.C., Sqdn. Ldr. A. S. Barratt, C.M.G., M.C., Sqdn. Ldr. J. R. W. Smyth-Pigott, D.S.O., Sqdn. Ldr. L. L. Greig, M.V.O., Sqdn. Ldr. A. H. W. E. Wynn, O.B.E., Sqdn. Ldr. G. P. Grenfell, D.S.O., Nov. 1st.

Sqdn. Ldrs.—Flt. Lt. A. A. B. Thomson, M.C., A.F.C. (Ad.), Flt. Lt. W. Thomas, M.C. (T.), Flt. Lt. W. G. P. Young, O.B.E. (S.O.), Flt. Lt. R. G. Parry, D.S.O. (S.O.), Flt. Lt. H. L. Reilly, D.S.O. (A.), Flt. Lt. C. C. Darley (A.), Flt. Lt. G. G. H. Cooke, D.F.C., A.F.C. (Ashp.), Flt. Lt. H.R.H. Prince Albert, K.G. (A.), Flt. Lt. G. S. M. Insall, V.C. (A.), Nov. 1st.

Flt. Lts.—Flying Officer F. Fowler, D.S.C., A.F.C. (S.), Flying Officer J. H. Norton, M.C., D.F.C. (A.), Flying Officer W. B. Farrington, D.S.O. (A.), Flying Officer J. F. Lawson, A.F.C. (A.), Flying Officer V. S. E. Lindop (A.), Flying Officer E. J. D. Townesend (S.O.), Flying Officer R. S. Capon (A.), Flying Officer W. H. Longton, D.F.C., A.F.C. (A.), Flying Officer J. S. Goggin (S.O.), Flying Officer F. M. F. West, V.C., M.C. (A.), Flying Officer R. Halley, D.F.C. (A.), Flying Officer C. J. Brockbank, M.B.E. (T.), Flying Officer A. W. Beauchamp-Proctor, V.C., D.S.O., M.C., D.F.C. (A.), Flying Officer A. Rowan (S.O.), Flying Officer W. H. Ellison (T.), Nov. 1st.

The following temp. appts. are made at the Air Ministry:—Staff Officer, 1st Class (Q.).—Maj. A. L. C. Neame, March 19th (substituted for notification in "Gazette," June 3rd).

Staff Officer, 3rd Class (P.).—Flt. Lt. W. D. Budgen, O.B.E., from (S.O., 2nd Class), Oct. 30th.

The following temp. appts. are made:—Col. (actg. Brig.-Gen.) H. C. T. Dowding, C.M.G., is graded for purposes of pay and allces. as Maj.-Gen. while officiating in comd. of an area, from April 5th to 25th.

Staff Officer, 1st Class.—Lt.-Col. (Hon. Col.) J. M. Home, C.B.E., is graded for purposes of pay and allces. as Brig.-Gen. (Admin.), from April 5th to 25th.

Staff Officer, 2nd Class (Air).—Sqdn. Ldr. C. E. Maude, Nov. 14th.

Staff Officer, 3rd Class (T.).—Graded for pay at Air Ministry rates.—Flt. Lt. T. W. Elmhirst, A.F.C., Aug. 1st.

Flying Branch.—Wing Comdr. G. W. P. Dawes, D.S.O., to be Wing Comdr. (A.), from Group Comdr., Oct. 18th.

Sqdn. Ldr. C. E. Maude to be Sqdn. Ldr. (A. and S.), from (S.O.), Oct. 16th.

Flt. Lt. N. H. Bottomley, A.F.C., to be Flt. Lt. (A.), from (S.O.), Oct. 18th.

Capt. J. C. Croft is graded for purposes of pay and allces. as Capt. while empld. as Capt. (A.), from May 1st to Sept. 15th.

Lt. (actg. Capt.) J. C. Cantrill to be Lt. (actg. Capt.) (A.), from (Ad.), July 26th.

Sec. Lts. to be Lts.:—J. L. Fletcher, D. Martin, Nov. 30th, 1918; C. S. Cope, June 13th.

Pilot Officer C. F. Kearns to be Flying Officer, Oct. 1st.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Pilot Officer E. M. Matthew (Lt., R.G.A.), Oct. 13th; Flying Officer C. R. H. Firth (Lt., R.G.A.), Oct. 22nd; Flying Officer L. H. Forrest (Lt., Indian Army), Oct. 23rd; Flying Officer A. G. Grant (Lt., Highd. L.I.), Flt. Lt. L. H. T. Sloan (Capt. Cameron Highrs.), Nov. 7th; Flying Officer L. M. S. Essell (Lt., E. Kent R.), Nov. 8th; Flying Officer W. G. B. McKechnie (Lt., R. Scots Fus.), Nov. 11th.

Sqdn. Ldr. the Hon. R. Coke, A.F.C. (Lt.-Comdr., R.N.), relinquishes his temp. R.A.F. commn. on return to Naval duties, Nov. 8th.

Sec. Lt. E. K. Dashwood relinquishes his commn. on ceasing to be empld., Nov. 4th.

Transferred to unempld. list:—Lt. J. E. L. Skelton, Jan. 31st; Lt. H. R. Watterson (R.G.A.), Feb. 10th (substituted for notification in the "Gazette" of April 4th, wherein this officer's rank was shown as "Sec. Lt."); Sec. Lt. J. M. Gray, Feb. 13th; Sec. Lt. R. H. St. Amory, March 8th; Lt. F. C. Dixon (Manchester R.), March 22nd; Capt. F. S. McGill, May 1st; Capt. A. C. Jowett, June 30th; Sec. Lt. A. E. I. Harter, Lt. F. L. Watson, July 12th; Sec. Lt. B. H. Wooler, July 29th; Lt. C. L. Lindberg, Aug. 1st; Lt. A. T. Drinkwater, D.F.C., Aug. 15th; Sec. Lt. W. L. Lidster, Sec. Lt. F. C. Young, Aug. 29th; Capt. G. J. Harter, D.F.C., Lt. J. W. Milner, Sept. 10th; Sec. Lt. J. D. Fullerton, Sept. 17th; Lt. C. E. Lovick, Sec. Lt. R. S. Wood, Sept. 26th; Sec. Lt. W. Evans, Lt. E. D. Gordon, Lt. T. J. J. Griffiths, Lt. E. C. Grimes, Sec. Lt. S. L. Haley, Sec. Lt. M. F. Hall, Sec. Lt. J. C. Hamilton, Lt. D. A. Harding, A.F.C., Sec. Lt. W. A. G. Hawker, Sec. Lt. B. H. Windsor, Sept. 28th; Sec. Lt. G. C. Garner, Sec. Lt. W. R. Godard, Sec. Lt. E. T. Hamilton, Lt. A. A. Harcourt-Vernon, Lt. H. A. Yates, Sept. 29th; Sec. Lt. C. J. Fleming, Lt. H. Goodwin, Oct. 6th; Sec. Lt. H. F. Harper, Maj. S. S. Halse, Oct. 10th; Sec. Lt. J. B. Geyer, Oct. 11th; Lt. T. Gilbert, A.F.C., Oct. 15th; Sec. Lt. A. Roberts, Oct. 23rd; Capt. C. Hanson-Abbott, Oct. 31st; Sec. Lt. H. G. Johnston, Sec. Lt. S. A. Simpson, Nov. 2nd; Lt. A. P. Taylor, Nov. 4th; Sec. Lt. A. B. Fricker, Sec. Lt. C. A. Hall, Lt. R. C. Henderson, Sec. Lt. E. Simpson, Lt. A. J. Taylor, Lt. H. W. G. Trotman, Lt. J. C. Walker, Nov. 5th; Capt. E. G. E. Donaldson, Lt. A. F. Harris, Sec. Lt. G. Hill, Lt. W. H. Howes, Sec. Lt. S. H. Potter, Sec. Lt. (Hon. Lt.) J. E. Radley, Nov. 7th; Lt. J. P. Gibbon, Sec. Lt. (Hon. Lt.) A. E. Tweed, Nov. 8th; Sec. Lt. (Hon. Lt.) R. H. W. Davidson, Nov. 9th; Sec. Lt. M. E. Brown, Capt. H. Thrower, Nov. 10th; Sec. Lt. (Hon. Lt.) W. V. Hyde, Sec. Lt. G. F. Poole, Nov. 11th; Sec. Lt. H. W. Brierley, Lt. J. E. Doyle, D.F.C., Lt. A. G. Lamplugh, Lt. R. J. Nixon, Lt. F. H. Pratchett, Lt. B. Thurston, Nov. 12th; Sec. Lt. G. W. Gant, Sec. Lt. H. Grellier, Sec. Lt. C. B. Hancock, Lt. W. C. Pruden, Sec. Lt. A. G. Renecle, Sec. Lt. G. M. Trundle, Sec. Lt. H. Williams, Lt. R. S. Winpenny, Nov. 13th; Lt. T. H. Ames, Lt. R. Clowes, Lt. J. G. Coombe, Lt. R. M. Dixon, A.F.C., Lt. H. O. Eichholz, Lt. H. G. Eldon, Sec. Lt. W. J. G. Godden, Sec. Lt. E. G. Holloway, Lt. H. A. Le Feuvre, Lt. J. S. Rough, Sec. Lt. A. H. Taylor, M.B.E., Lt. C. E. Wilmot, A.F.C., Nov. 14th; Capt. B. Crossley-Meates, Sec. Lt. R. E. H. Gould, Nov. 15th; Sec. Lt. M. Tait, Nov. 16th; Sec. Lt. G. F. Sharman, Nov. 17th; Sec. Lt. S. R. Ham, Lt. M. Helliwell, Sec. Lt. J. W. Ravenscroft, Nov. 18th; Lt. H. Haycock, M.C., Lt. J. Howard-Brown, Nov. 19th; Lt. C. F. Fyfe, Lt. R. R. Greenlaw, Lt. J. N. S. Stott, Nov. 20th; Lt. C. F. Cotton, Nov. 21st; Sec. Lt. H. A. Fourte, Nov. 22nd.

Lt. L. Hamilton, D.F.C., is retransferred to unempld. list, Nov. 28th.

Capt. E. W. Leggatt, M.C. (Lt., Wilts R.), resigns his commn., and is permitted to retain his rank, Nov. 29th.

The following Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—H. Booth, Nov. 20th; D. Barnett, C. K. Mills, Nov. 21st.

Lt. A. Kiteley (Lt., R.A.) relinquishes his commn. on account of ill-health caused by wounds, Nov. 15th.

Lt. H. T. J. Hynes (Lt., R.G.A.) resigns his commn., Nov. 29th.

The following Sec. Lts. relinquish their commns. on account of ill-health caused by wounds, and are permitted to retain their rank:—R. A. Clarke, Oct. 14th; G. H. Carr, Nov. 15th; J. Turnbull, Nov. 20th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—E. O. Korner, Nov. 20th; W. H. Cox, Nov. 21st; R. Lazzari (contracted on active service), Nov. 22nd.

Sec. Lt. K. B. Terry resigns his commn., Nov. 29th.

Sec. Lt. W. A. Grant is antedated in his appt. as Sec. Lt. (A. and S.) to June 28th, 1918.

The surname of Lt. R. S. Buller is as now described, and not "R. S. Butler" as stated in "Gazette" of Oct. 24th.

The notification in "Gazette" of Aug. 29th concerning Sec. Lt. W. Emery is cancelled (notification in July 4th "Gazette" to stand).

The notification in "Gazette" of Sept. 2nd concerning Sec. Lt. C. F. Williams is cancelled

The notification in "Gazette" of Oct. 3rd concerning Lt. W. R. Eastman is cancelled (notification in Aug. 5th "Gazette" to stand).

The notification in "Gazette" of Nov. 11th concerning Sec. Lt. J. F. M. Phillips is cancelled.

The notification in "Gazette" of Nov. 21st concerning Sec. Lt. E. K. Dashwood is cancelled.

Administrative Branch:—Maj. (actg. Lt.-Col.) R. J. F. Barton, O.B.E., relinquishes the actg. rank of Lt.-Col. on ceasing to be empld. as Lt.-Col., from (S.O.), March 3rd (substituted for notification in "Gazette" of Nov. 7th).

Flt. Lt. G. T. Tait to be Flt. Lt., from (S.O.), Aug. 8th.

Flt. Lt. A. H. Strading to be Flt. Lt., from (S.O.), Oct. 20th.

The following Lts. are graded for purposes of pay and allces. as Capts., whilst empld. as Capts.:—A. Webb, May 1st to July 25th; (Hon. Capt.) G. H. Hill, June 28th to Sept. 26th.

Flying Officer (actg. Flt. Lt.) J. C. Cantrill relinquishes the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lt., from (A.), Aug. 29th.

Pilot Officer F. W. Sinclair to be Flying Officer, Aug. 21st.

J. M. Andrews is granted a temp. commn. as Sec. Lt., Oct. 25th, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flying Officer E. King (Lt., R. Ir. R.), Oct. 6th; Flying Officer (Hon. Flt. Lt.) A. E. Miller, M.C. (Capt., W. Rid. R.), Nov. 13th.

Transferred to the unempld. list:—Sec. Lt. A. C. Marquis Douro, March 6th; Sec. Lt. A. A. Dutch, April 1st; Sec. Lt. W. P. Griffiths, Sept. 28th; Lt. D. D. Carcary, Oct. 10th (substituted for notification in "Gazette" of Nov. 7th, wherein he was shown as Sec. Lt.); Lt.-

Col. E. C. Mulgrue, Nov. 3rd; Capt. R. C. Ward, Lt. C. T. Wilson, Nov. 5th; Capt. R. A. Pierpoint, Nov. 6th; Sec. Lt. G. W. Colebourne, Nov. 8th; Lt. H. Higgins, Nov. 10th; Lt. G. T. W. Burkett, M.C., Lt. L. J. S. Dowland, Nov. 11th; Sec Lt. O. B. Paton, Lt. (Hon. Capt.) D. R. Thomas, Nov. 12th; Capt. L. P. Ferris-Scott, Sec. Lt. T. E. Mahoney, Nov. 13th; Sec. Lt. C. E. Beeson, Lt. E. W. Bourne, Nov. 14th; Sec. Lt. (actg. Capt.) J. H. Slingsby, Nov. 16th; Lt. S. J. House, Nov. 18th.

The following relinquish their commns. on account of ill-health, and are permitted to retain their rank :—Lt. J. Woolfenden (S. Lancs R.), caused by wounds, Nov. 17th; Sec. Lt. C. W. Bowman, contracted on active service, Nov. 19th.

The notification in "Gazette" of Oct. 24th concerning Sec. Lt. A. H. Black is cancelled.

The notification in "Gazette" of Sept. 26th concerning Flying Officer J. C. Cantrill is cancelled.

The notification in "Gazette" of Nov. 18th concerning Sec. Lt. C. O. D. Kidd is cancelled.

Technical Branch.—Flt. Lt. (actg. Sqdn. Ldr.) J. C. Watson relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., Grade (B.), Oct. 22nd (substituted for notification in "Gazette" of Nov. 7th).

Lt. L. F. Peaty is graded for purposes of pay and allces. as Capt. whilst empld. as Capt., Grade (A.), from May 1st to July 25th.

Lt. J. W. Gardner to be Lt., Grade (A.), from (Ad.), and is graded for purposes of pay and allces. as Capt. whilst empld. as Capt., Grade (A.), May 20th.

Lt. S. D. Carpenter to be Lt., Grade (B.), from (A.), Nov. 18th, 1918 (substituted for notification in "Gazette" of Dec. 24th, 1918).

Flying Officer J. W. Gardner relinquishes the grading for pay and allces. as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (A.), Oct. 11th.

Sec. Lts. to be Lts. :—J. K. Shrimpton, Oct. 13th, 1918, without the pay and allces. of that rank prior to Dec. 1st, 1918 (substituted for notification in "Gazette" of April 11th and May 23rd); J. B. Donald, Feb. 24th; F. Denham, March 13th (substituted for notification in "Gazette" of Sept. 19th); E. R. Beckwith, April 2nd, 1918, without the pay and allces. of that rank prior to March 15th; W. J. Maley, June 22nd.

Pilot Officers to be Flying Officers :—F. A. Cherry, J. Turner, W. Wheatley, Oct. 1st.

Pilot Officers to be Flying Officers, without the pay and allces. of that rank :—F. H. Cashmore, S. A. Conway, C. Dollery, T. F. Emms, D. Y. Mattinson, Oct. 1st.

Capt. T. Goulbourn relinquishes his commn. on ceasing to be empld., Nov. 6th.

Transferred to unempld. list :—Sec. Lt. (Hon. Lt.) S. J. Elliott, Jan. 18th; Sec. Lt. C. D. Wright, Sept. 29th; Sec. Lt. (Hon. Lt.) P. Giblin, Oct. 9th; Lt. A. N. Greg, Oct. 11th; Sec. Lt. G. Mitchell Oct. 15th; Capt. P. E. Gwyer, M.B.E., Sec. Lt. G. G. Hargrave, Oct. 17th; Lt. C. J. Miln, Oct. 28th (substituted for notification in "Gazette," Oct. 24th); Sec. Lt. (Hon. Lt.) E. Y. Fitz-Gerald, Maj. A. E. Oxley, Lt. (Hon. Capt.) L. V. Rothschild, Sec. Lt. M. N. Staight, Maj. C. Suckling, Nov. 2nd; Sec. Lt. (Hon. Lt.) T. J. Fazackerley, Lt. D. N. Keith, Nov. 3rd; Sec. Lt. H. E. Wiltshire, Nov. 4th; Sec. Lt. W. J. Cole, Capt. M. Hodge, Nov. 6th; Lt. W. R. Tuddenham, Nov. 7th; Capt. R. P. Cannon, Sec. Lt. (Hon. Lt.) D. R. J. O'Connor, Lt. F. A. Swoffer, M.B.E., Nov. 8th; Lt. G. J. H. Stein, Sec. Lt. P. G. White, Nov. 9th; Sec. Lt. D. J. Beaumont, Sec. Lt. W. O'Donoghue, Nov. 11th; Sec. Lt. T. G. Boyland, Sec. Lt. (Hon. Lt.) B. N. Goudge, Sec. Lt. (Hon. Lt.) W. V. Gray, Capt. W. E. Tinson, Nov. 12th; Sec. Lt. R. L. H. Hulme, Sec. Lt. C. H. Ivatts, Lt. W. S. Smart, Sec. Lt. G. Wade, Nov. 13th; Lt. H. Darnell, Lt. J. Wheatland-Clinch, Nov. 15th; Sec. Lt. (Hon. Lt.) S. Blore, Lt. D. H. Clement, Nov. 20th; Maj. A. Cleghorn, Nov. 21st; Capt. W. T. Morris, Nov. 22nd.

The notification in "Gazette" of Sept. 23rd concerning Pilot Officer A Robinson is cancelled.

The notifications in the "Gazettes" of Aug. 5th, Sept. 16th, and Oct. 24th concerning Flying Officer J. W. Gardner are cancelled.

The notification in the "Gazette" of July 15th concerning Lt. C. H. Knight is cancelled.

Medical Branch.—Capt. (Bt. Maj.) F. C. Cowtan, R.A.M.C., is granted a temp. commn. as Sqdn. Ldr. on seconding to the R.A.F., Sept. 1st.

Flying Officers to be Flt. Lts. :—S. E. Duff, Aug. 27th; A. Parker, Oct. 5th; T. D. J. A. Fuller, Oct. 17th; E. T. McElligott, Nov. 4th; D. C. Farquharson, Nov. 14th; J. T. T. Forbes, Nov. 15th; J. W. Healy, Nov. 18th; M. J. Smyth, Nov. 20th.

Capt C. T. Costello relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Nov. 21st.

Dental Branch.—Flying Officers to be Flt. Lts. :—N. A. Goudge, Oct. 8th; W Inman, Oct. 25th; L. S. Kettlewell, Oct. 31st; W. J. Singleton, J. Smith, Nov. 11th; J. Jones, J. Wren, Nov. 15th.

Chaplains Branch.—Rev. P. R. Butler is transferred to the unempld. list, Nov. 7th.

Memoranda.—The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other caess :—T4/239315 L. Harris, 41349 H. S. Hurn.

The following Cadets are granted hon. commns. as Sec. Lts. :—179194 M. A. Fogarty, Jan. 7th; 9383 E. W. Ayling, April 6th; 280522 H. C. Scott, May 3rd; 241044 W. R. Marriott, June 1st; 56130 L. K. Forbes, July 8th.

Capt. T. E. Longridge, O.B.E. (Capt., R.A.S.C.) relinquishes his temp. R.A.F. commn. on return to Army duty, Nov. 6th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld. :—F. Dawson, R. G. Underwood, Sept. 16th.

Transferred to the unempld. list :—Lt. F. E. Hobley, from (S.O.), Capt. C. Rayner, from (S.O.), Nov. 1st; Capt. C. S. Nunn, from (S.O.), Nov. 10th; Capt. (actg. Maj.) D. C. James, O.B.E., from (S.O.), Nov. 20th.

Hon. Sec. Lt. F. Smith relinquishes his hon. commn., May 1st.

Capt. G. H. A. Hawkins (Capt., Manch. R., T.F.) relinquishes his commn. on account of ill-health caused by wounds, and is granted the rank of Maj., Nov. 17th.

PERSONAL NOTICES.

NAVAL.

Engagement.

SMYTH-PIGOTT—FEILDING.—The wedding of Lieut.-Colonel Ruscombe Smyth-Pigott, D.S.O., R.A.F. (late R.N.A.S.), and Lady Clare Feilding will take place at Newnham Paddox, Lutterworth, on Tuesday, Dec. 30th, at 10.30.

MILITARY.

Deaths.

KNIGHT.—Frederick Ayshford Knight—or Teddy, as he was usually known—who was recently killed while flying at Cambridge, was the eldest son of Major Eric Knight, M.P., and Mrs. Knight, of Wolverley House, Kidderminster.

A correspondent writes :—

He was educated at St. David's, Reigate, and Eton. He left Eton at the age of seventeen to join the British Army, but being too young he went across to France and succeeded in being taken on as an ambulance driver to the French Army. He went through most of the trying times at Verdun, and eventually came home to England and tried to join the Royal Air Force. For some obscure reason he was turned down as unfit, and eventually was appointed to a cadet battalion for the Guards.

On demobilisation he went up to Trinity College, Cambridge, where at the time of his death he was in his second year.

Teddy Knight was one of that all-too-rare type, the lover of flying for flying's sake. Recently at his own expense he started to learn to fly at a well-known English flying school and had the makings of a really fine pilot. His enthusiasm was unlimited, and he always took a joy-ride when he could get one, and it was during one of these latter that he met his death. So far as one can gather, it was the old story of a failing engine on leaving the ground.

Had he lived, Teddy Knight would undoubtedly have made a great name for himself in the flying world.

Always cheery and ready to help one out of a difficulty, good at games and his work and a brilliant pianist, the world is the poorer for his loss and the writer loses his best and most valued friend.—G. D.

SPENCE.—Lieutenant James Hamilton Spence, R.G.A. and R.A.F., who was previously reported missing on July 16th, 1918, is now officially presumed to have been killed. He was the only son of Mr. and Mrs. Hamilton Spence, Stoke Abbott, Beaminster, Dorset. He was 20 years of age.

Engagement.

BODDY—EWEN.—The engagement is announced between Lieut. J. A. V. Boddy, D.L.I. and R.A.F., son of the Rev. and Mrs. A. A. Boddy, All Saints Vicarage, Sunderland, and Marjorie D'Arcy, younger daughter of Mr. and Mrs. A. J. Ewen, of Leicester.

Marriages.

LINDOP—LEVASSEUR.—On Nov. 29th, at the Westminster Cathedral, Captain A. H. E. Lindop, M.C. and Bar, 37th Dogras, Indian Army, attd. R.A.F., elder son of Lt.-Colonel A. H. Lindop, late Royal Dublin Fusiliers, was married to Miss Ivy Gertrude Levasseur, elder daughter of Mr. E. Levasseur, of Frinton, Pinner.

MITCHELL—HINGSTON.—On Oct. 31st, at Brompton Parish Church, S.W., Wing. Comdr. W. G. S. Mitchell, D.S.O., M.C., A.F.C., R.A.F., was married to Essy, widow of the late Capt. F. L. Hingston, Duke of Cornwall's Light Infantry, of 118, Brompton Road, S.W., by Prebendary A. W. Gough.

STUART-WORTLEY—EDWARDES.—On Nov. 12th, at St. James's Church, Spanish Place, Major Nicholas Rothesay Stuart-Wortley, M.C., R.A.F., only son of Major-General the Hon. E. and Mrs. Stuart-Wortley, was married to Marie Louise, widow of the late Captain the Hon. Cecil Edwardes.

WINKWORTH—DONALD.—The marriage of Mr. Henry Winkworth, late Queen's Bay's and R.A.F., and Miss Margot Donald, was celebrated on Nov. 19th, at St. James's Church, Spanish Place, W. Father Thurston, S.J., officiated.

AIR FORCE.

Marriage.

HAWARD—DUNCAN.—On Oct. 23rd, at Brechin Cathedral, Forfarshire, Reginald S. Haward, late R.A.F., younger son of Mr. and Mrs. Percy J. Haward, of Hendon, was married to Margaret Edith Balfour, daughter of Mr. and Mrs. James Duncan, of Balfour, Brechin, N.B.

Births

FORBES.—On Nov. 23rd, at 8, Kensington Gate, W.8, Marjorie, the wife of Wing Commander J. L. Forbes, O.B.E., R.A.F., of a son.

WARBURTON.—On Oct. 8th, at Simla, India, the wife of Capt. Peter Warburton, M.B.E., R.A.F., of a son.

WILCOCK.—On Nov. 8th, to the wife of Capt. C. A. Wilcock, A.F.C., R.A.F.—a son.

THE ROYAL AERO CLUB NOTICES.

SPECIAL COMMITTEE MEETING.

A special meeting of the Committee was held on Wednesday, Nov. 26th, 1919, when there were present Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (in the chair), Mr. Ernest C. Bucknall, Lt.-Col. Spenser D. A. Grey, D.S.O., Sqdn. Ldr. T. O'B. Hubbard, M.C., R.A.F., Lt.-Col. F. K. McClean, Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F., and the Secretary.

Presentation to Sr. Guido Janello.—A silver bowl was selected for presentation by the Royal Aero Club to Sr. Guido Janello for his notable flight in the Jacques Schneider Competition at Bournemouth on Sept. 10th, 1919.

British Record.—The following British records were granted :—

Pilot : Capt. G. W. Gathergood.
Machine : Airco 9R (Aircraft Manufacturing Company, Ltd.).
Motor : 450 h.p. Napier "Lion" (D. Napier & Son, Ltd.).
Date : Nov. 15th, 1919.

Distance in a Given Time—Closed Circuit.

Time. Hours.	Distance. Kiloms.	Distance. Miles.	Kilometres per hour.	Miles per hour.
¾	57.09	35.47	228.36	141.89
½	115.35	71.67	230.70	143.35
1	232.57	144.51	232.57	144.51
2	403.13	250.49	201.56	125.24

Greatest Speed.

Distance. Kilometres.	Time. Hr.	Mins.	Secs.	Kilometres per hour.	Miles per hour.
5	0	1	14.85	240.48	149.43

Speed—Closed Circuit Without Alighting.

Distance. Kiloms.	Time. Hr.	Mins	Secs.	Kilometres per hour.	Miles per hour.
5	0	1	24 1/5	213.77	132.84
10	0	2	36 1/5	230.47	143.21
20	0	5	25 1/5	221.40	137.57
30	0	8	13 1/5	218.97	136.07
40	0	11	1	217.85	135.37
50	0	13	9 3/5	227.96	141.65
100	0	26	7 4/5	229.62	142.68
150	0	38	44	232.35	144.38
200	0	51	37 1/5	232.47	144.45
250	1	4	29	232.61	144.54
300	1	17	11	233.21	144.91
350	1	29	50 4/5	233.72	145.23
400	1	42	32	234.07	145.44

Timekeepers : A. V. Ebblewhite and A. G. Reynolds.
Official Observers : Harold E. Perrin and Capt. J. C. Brooke, D.S.C.

Distance in a Straight Line Without Alighting—Aviator and One Passenger.

Pilot : Capt. Sir John Alcock.
Machine : Vickers-Vimy-Rolls (Messrs. Vickers, Ltd.).
Motor : Two 350 h.p. Rolls-Royce "Eagle" 8 (Messrs. Rolls-Royce, Ltd.).
Date : June 14th-15th, 1919.
Distance : St. Johns, Newfoundland, to Clifden, Co. Galway. Kilometres : 3041. Miles : 1890.

Great Britain to Australia Flight.—The following additional entry was reported :—

Pilot and Navigator : Lt. Raymond John Paul Parer, A.F.C. Crew : Lt. J. C. McIntosh (2nd Pilot). Machine : F.E.2b. Engine : 200 h.p. Beardmore.

Death of M. Deutsch de la Meurthe.—The death of Monsieur Henry Deutsch de la Meurthe on Nov. 23rd, 1919, was reported, and it was unanimously resolved that messages of sympathy be sent to Madame Deutsch de la Meurthe and the Aero Club of France.

The Secretary reported that he had arranged with Mr. Pierre Marechal to represent the Royal Aero Club at the funeral.

THE FLYING SERVICES FUND

(Registered under the War Charities Act, 1916).

Administered by the Royal Aero Club for the benefit of Officers, Non-Commissioned Officers, and Men of the Royal Air Force who are incapacitated while on duty, and for the widows and dependants of those who are killed or die from injuries or illness contracted while on duty.

Honorary Treasurer : The Right Hon. Lord Kinnaird.

Committee : H.R.H. Prince Albert, K.G. (Chairman), Mr. Chester Fox, Sqdn. Ldr. T. O'B. Hubbard, M.C., R.A.F., Sqdn. Ldr. C. E. Maude, R.A.F., Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F.

Secretary : H. E. Perrin.

Bankers : Messrs. Barclays' Bank, Ltd., 4, Pall Mall East, London, S.W.1.

	£	s.	d.
Total Subscriptions received to Nov. 24th, 1919	£16,680	4	7
W. J. Leonard	5	0	0
Capt. D. E. B. K. Shipwright	1	1	0
Mrs. Alfred Amos	0	10	0
Maj.-Gen. the Rt. Hon. J. E. B. Seely, C.B., D.S.C., M.P.	10	0	0
T. W. H. Mitchell	100	0	0
Total, Dec. 1st, 1919	£16,796	15	7

NEW COMPANIES.

The following new companies have been registered :—

Weybridge Motor Engineering Co., Ltd.—Private company. Registered Nov. 21st. Capital, £200,000 in £1 shares. Objects : To take over all or part of the business, property, contracts and liabilities of Gordon Watney and Co., Ltd. (incorporated in 1913), and to carry on the business of buyers, sellers, importers, exporters, manufacturers and repairers of motors, engines, machinery, motor vehicles and motor cycles, motor, electrical and mechanical engineers, fitters, etc., and to enter into an agreement with G. E. Sandell and Gordon Watney and Co., Ltd. The subscribers (each with one share) are :—A. H. Hewett, 40, Cambridge Road, Bromley, Kent (secretary to a limited company), A. J. L. Greig, 53, Shepherd's Lane, Dartford, Kent (commercial clerk), J. S. Stack, 145, St. John's Hill, Clapham, S.W. (commercial clerk). The first directors are to be appointed by the subscribers. Solicitors : Piesse and Sons, 15, Old Jewry Chambers, E.C.

Dover Aircraft Ventures, Ltd.—Private company. Registered Nov. 20th. Capital, £1,000 in 750 ordinary shares of £1 each and 5,000 deferred shares of 1s. each. To establish, maintain and work lines and services of aerial conveyance, and to carry on the business of carriers of passengers, goods and mails, etc. The subscribers (each with one share) are :—J. M. E. Webb, 1, Heathfield Av., Dover (clerk), R. G. S. Williams, 22, Leighton Road, Dover (clerk). Table "A" mainly applies. Solicitor : E. E. Chitty, 19, Castle Street, Dover.

Modern Motion, Ltd.—Private company. Registered Nov. 21st. Capital, £1,000 in 800 preference shares of £1 each and 800 ordinary shares of 5s. each. To carry on the business of dealers in motors, aircraft and their accessories, general merchants, etc. The subscribers (each with one share) are :—G. H. Bettinson, 93, Old Christchurch Road, Bournemouth (aeronautical engineer), Capt. H. Kirby, Linden Hall Hydro, Bournemouth. First directors : G. H. Bettinson and Capt. H. Kirby. Solicitor : A. Glynne Jones, Cromwell House, Surrey Street, W.C. Registered office : 93, Old Christchurch Road, Bournemouth.

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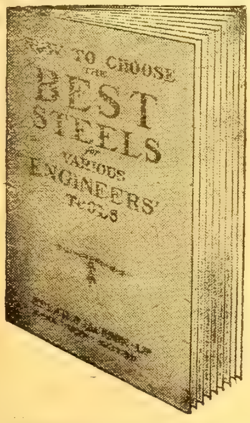
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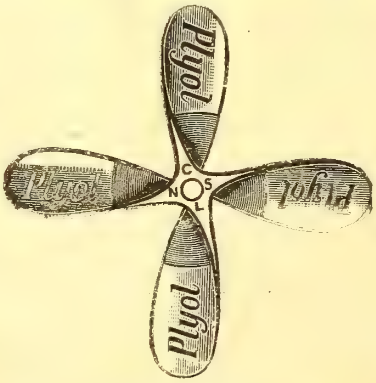

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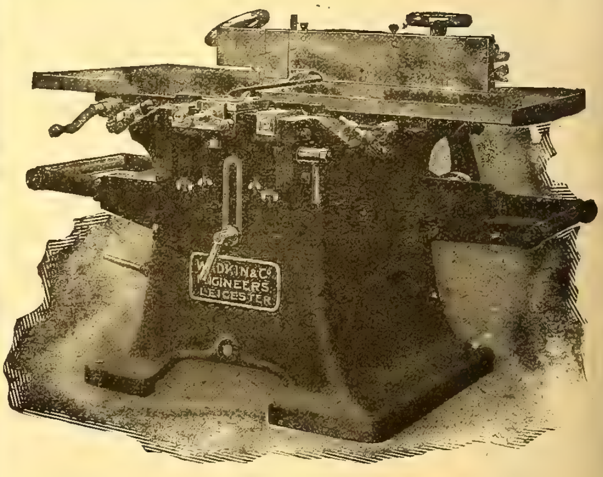

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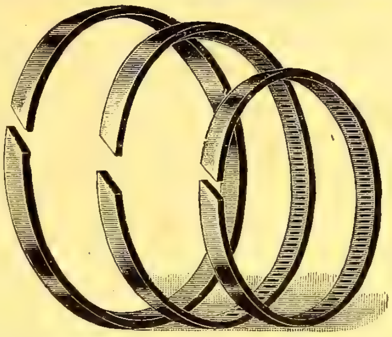

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GROUND WORK.

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(*f*) COMMUNICATIONS.—One of the lessons learnt during the war was the supreme necessity for rapid ground communication. It was early realised that for civil aviation ground communications, wireless, etc., must be speeded up, and greater facilities afforded, in order that the arrival and departure of machines should be promptly reported. For this purpose the ordinary public telegraph and telephone service is often insufficient. Owing to the time occupied in conveying the message to and from the nearest public office, and the pressure of traffic at the present time on the long-distance telephone lines, especially abroad, the aeroplane may arrive as soon as, or even before, the receipt of the message announcing its departure. The scope of the branch at the Air Ministry in charge of this particular work covers the requirements of both civil and Service sides. For the present purpose, however, it is proposed, as far as is possible, to refer only to its functions in regard to civil aviation.

The duties of the Communications Branch may be regarded as failing under two broad heads, which, for the sake of convenience, may be termed *signals* and *navigation*.

Signals.—Under the first heading an important part of the work carried out has been in connection with wireless telegraphy and telephony, and the development of aerial navigation by means of directional wireless. Wireless stations have been erected at Hounslow and Lympne, and wireless liaison has been established with the French for the purpose of the London-Paris air route. By this means machine reports and weather reports have been successfully exchanged, the number of such messages on this route averaging 30 a day. From the experience thus gained it has been possible to inaugurate similar arrangements, which are now nearly complete, for the Belgian and Dutch routes.

Meteorological reports will in future be transmitted almost entirely by wireless telegraphy. At present weather reports are received by this means from British and Continental Stations for the information of the Meteorological Service, and weather forecasts distributed three times a day from the Air Ministry.

A complete scheme of wireless organisations for the entire Meteorological Service has now been prepared. In addition to Communications, the branch is responsible for the supervision of the training and examination of the wireless personnel.

Regulations are also being drawn up in conjunction with the Post Office for a revised wireless operator's certificate in order to provide for qualified "Air" wireless operators. Similarly, the conditions for obtaining licences to work wireless stations have been revised to include the use of wireless in commercial aircraft and from ground to air.

It may be noted that the Communications Branch has, since the armistice, been instrumental in arranging for the release for public use of—

Switchboards	63
Trunk Lines	96
Exchange Lines	324
Telephones	2,040

Navigation.—On the navigational side, the whole of the London to Paris air route has been surveyed, an experimental strip map prepared for aerial purposes and "flying directions" compiled containing information as to aerodromes, landing grounds, wireless and meteorological data. This is the first of a comprehensive library of air maps and flying directions which it is hoped will be produced for all the main routes. Charts and maps are also prepared and issued for all intended flights on new routes.

In co-operation with Trinity House, proposals have been considered for the installation of an aerial lighthouse system on the London to Paris route, and an experimental lighthouse has been erected at Hounslow. Preparations have also been made for the lighting of the aerodromes on this route, in the event of firms setting up services which necessitate night flying.

None will quarrel with the pious resolution to expedite ground communications as an aid to aerial navigation. One is not aware how far the Air Ministry has been able to retain the services of those very able wireless officers who served in the R.A.F. One fears, judging by the wholesale demobilisation of the cleverest technical and research officers in other branches of the Service, that there can be but few left. But in any case the R.A.F. possesses an equipment of wireless apparatus, both telegraph and telephone, which is unsurpassed by any other country. It is only to be hoped that it retains people who are capable of operating the instruments.

On the meteorological side there does not seem to be so much reason for satisfaction. During the war "Meteor"—as the weather-service was commonly called —was reasonably good at guessing the weather for the next few hours, and sometimes for days, ahead. But since the war, either owing to defective communications or the lack of interest among observers, one hears that information concerning the weather even in this country has been anything but accurate.

Of all our sciences that of Meteorology seems to be the most backward. Those responsible for it seem to have their heads too much in the clouds in a metaphorical sense and not enough so in a practical sense. If some of the Meteorological Office officials did some flying they would doubtless learn quite a lot.

The notes concerning maps and the lighting of regular air routes are interesting, but not precisely informative. Something more might be said about these subjects in future communiqués.

CONCEALED INFORMATION.

Doubtless the fact that the Synopsis itself has been compiled by the Department of Information under General Swinton accounts for the modest brevity with which this department is dismissed. Its activities are described thus :—

(*g*) COLLATION OF INFORMATION.—Technical information is collected and collated by the Information Branch from the various foreign journals with a view to assisting the constructive side of the industry, civil and Service. From time to time, as thought necessary, technical memoranda on different subjects are issued. The Research Branch of the Air Ministry is kept supplied with information, as also is the business community interested in civil aviation.

In regard to foreign markets, close co-operation has been established with the activities of the Department of Overseas Trade and the various naval and military attachés. By these means British firms are supplied with information in the form of periodical summaries, on such matters as foreign aviation, amalgamation of foreign aircraft firms, regulations and byelaws affecting civil aviation in foreign countries. During the past two months 45 special notices have been sent out through the Society of British Aircraft Constructors, and numerous requests from British firms for information on urgent questions have been received and answered.

This branch is also responsible for the issue of Official Press Communiqués on all questions affecting civil aviation.

One is glad to hear that so much information is collected and disseminated by this branch, for one confesses to a lamentable ignorance of the fact hitherto. In the good old days when there was a war on, the Technical Department had a sub-department under Major Prance which used to collate technical information concerning enemy aircraft compiled by such eminent writer-artists as Captain Wilfred Aston and Mr. Gordon Crosby, and used to send this to the mere Technical Press, who used to publish it for the education of all in the Aircraft Industry and its ancillary trades.

Since the cataclysm of this devastating peace (to quote Lieut.-Col. Mervyn O'Gorman) no such information has been issued for the education of the οι πολλοι of the Aircraft Industry. No doubt—as the Synopsis tells us so—"technical memoranda on different subjects are issued." But they seem to be confined to the consumption of the managing director or the office-boy of the firms to which they are addressed. One has seen none of these memoranda oneself, nor has one heard any of them discussed by practical technical men among aircraft makers and users, as was always the case in the days of war.

Nor has one heard any discussion among the commercial people in the Aircraft Industry concerning "information in the form of periodical summaries on such matters as foreign aviation, amalgamation of foreign aircraft firms, etc." Presumably the circulation of these also is confined to managing directors and office-boys, so that the information does not percolate to such base varlets as sales managers, foreign representatives, and so forth.

Perhaps if the Department of Concealed Information kept more closely in touch with the Technical Press it might be helped in making its "periodical summaries" and "technical memoranda" better known and more appreciated among those for whose benefit they are presumably issued.

So far as "Official Press *Communiqués* on all questions affecting civil aviation" are concerned, one is the first to acknowledge that these are excellently adapted to their purpose. They are admirably suited to the mental capacity of the editorial staffs of the daily news-sheets to whom they are communicated.

Moving "Meteor."

In a previous paragraph one has perhaps indicated that the Science of Meteorology is a trifle backward. It is therefore of interest to learn that "Meteor" is to be moved. The Synopsis records the fact thus :—

> (*h*) Meteorology.—To no other form of human activity are the vagaries of the weather so vital as to aviation. Information of air currents, and more especially of mists and fog, may make the difference between success and failure. For this reason, and although the claims upon a Government meteorological organisation of the Army, the Navy, the Board of Agriculture and Fisheries and other bodies concerned were fully recognised, it was recently decided by the Cabinet to transfer the Meteorological Office and attach it to the civil aviation department of the Air Ministry. With the exception of one or two details, the arrangements for this transfer are now complete.
>
> As much as possible of the personnel, etc., are being moved from South Kensington to Kingsway; but lack of accommodation makes a complete transfer at present impracticable. A new Meteorological Committee has been formed, with the Controller-General of Civil Aviation as President, and Sir Napier Shaw, Director of the Meteorological Office, as Chairman. On this Committee the Royal Society has two representatives, and the Admiralty, War Office, the Board of Agriculture and Fisheries, the Board of Trade and Colonial Office have each nominated one representative.
>
> Endeavours are being made further to assist scientific research, and, in addition to the ordinary routine work of the Meteorological Office, special attention is now being devoted to the requirements peculiar to flying.
>
> A system of weather maps is being produced at six-hour intervals from information supplied by a network of R.A.F. and Civil Meteorological Office Stations, and reports and forecasts covering various aerial routes have been prepared and issued, together with maps showing the speed and direction of the upper wind over each.
>
> In connection with the Cape-Cairo route, a statement has been drawn up showing the annual variations of the weather by months.
>
> Special attention has been given to the London-Paris route, for which the service of weather reports is being improved. Good communications are vital to an efficient meteorological service and in this particular some difficulty is necessarily experienced in dealing with the large area and many foreign countries now concerned. All countries signatory to the Air Convention undertake to carry out certain arrangements with regard to communications; but the speed in setting up a through system must necessarily be that of the slowest country.
>
> One of the first steps consequent upon the transfer of the Meteorological Office to the Air Ministry has been the closing down and elimination of many R.A.F. meteorological units called into existence during the war. General after-war requirements for meteorological information have been considered, and a scheme formulated providing for the least possible number of stations necessary. The policy followed has been to obviate overlapping between flying and non-flying meteorology.
>
> The personnel of all meteorological stations at home is being placed on a civilian footing. Where service personnel is employed, as for instance in Egypt, it will be trained by the Meteorological Services. The necessary steps for the demobilisation of Service personnel and their substitution by civilians have been taken.

The formation of the mixed Meteorological Committee is distinctly interesting. It occurs to one that if it included one or two working members of farmers' co-operative societies and a few sea-going members of the Seamen's and Firemen's Union it might get more practical information on what weather is and why than it is likely to obtain as at present constituted. Also a few experienced cross-country pilots might be of value.

The "closing down and elimination of many R.A.F. meteorological units" may be a financial necessity, but it is much to be regretted, for some of these units included men with a "weather sense" which was more valuable than all the pseudo-science of the old Meteorological Office. It is to be hoped that some of those men may have been discovered and attached to the new organisation.

Such an organisation is a vital necessity to Civil Aviation, and one hopes that it will soon become at least as efficient as our telephone system.

Our Abandoned Airships.

We next come to the very sore question of civilian airships. This great subject is covered in one brief and pathetic paragraph thus :—

> (*i*) Airships.—Although the rigid airship has not been exploited in this country to the same extent as the aeroplane, the commercial possibilities of this type of aircraft in connection with long-distance flights are fully realised. By the curtailment of the Government airship programme, a certain number of airships, in various stages of construction, became available for civil enterprise. A public meeting was held to explain the position, and those interested were invited to consider the formation of a company with a view to taking over these surplus airships and to investigate the commercial value of this type of aircraft. The formation of this company is now under consideration.

One believes firmly that for the long-distance passenger air lines of the future, such as New York-London, New York-Paris, London-Petersburg, London-Calcutta, Calcutta-Melbourne, and so forth, the airship is a better vehicle than the aeroplane or seaplane, though for mail-carrying relays of aeroplanes will be faster. It is therefore of interest to learn that the formation of a company to take over our abandoned airships is under consideration.

One cannot help thinking that if the great airship-building firms, namely Airships Ltd., Armstrong-Whitworth's, Beardmore's, Short's, and Vickers Ltd., were to pool a certain amount of capital and form a co-operative business to operate existing ships, they could make it pay its way as a joy-ride concern. Thus they would learn enough to make it worth while to build new and improved ships for long-distance passenger lines. It will be of great interest to see how the existing negotiations develop.

The D.C.A. Staff.

Finally the matter of the Staff of the Department of Civil Aviation is discussed as follows :—

(*j*) **Staff.**—The staff of the Department of Civil Aviation on October 31st consisted of a total of 143, of which 52 are administrative officials and 91 clerical subordinates, at a total salary of £50,000 per annum. These figures include the Air Ministry meteorological staff, but not the personnel of the Meteorological Office recently transferred to the Air Ministry.

It should be borne in mind that the staff of the Communication, Accidents, and Meteorological branches are engaged on technical work for both the civil and Service sides.

The selection of a staff to deal with the many questions involved has not been an easy task owing to the fact that the Department must in the nature of things be a civil one, and that those officers possessing the requisite administrative and technical experience can usually be found only among those who have served in or with the Royal Air Force. It has been impossible until conditions are more certain to offer fixity of tenure in the Department of Civil Aviation and the terms of appointment have been necessarily brought into unfavourable comparison with the improved rates of pay recently conceded to the Royal Air Force. The result has been that recruitment has been difficult and slow. Steps are being taken to remedy this.

The Staff of the D.C.A. has been the subject of much discussion among all those concerned with Civil Aviation. It has been very generally said that though the individual members of the Staff are excellent their number is inadequate to their task. This appears evident when one learns that there are only 52 administrative officials and 91 clerical employees.

The fact that they have to administer only 241 aeroplanes, 374 pilots, and 258 ground engineers does not really affect the question. Their duty is to organise the Department so that it can deal with the future expansion of Civil Aviation. And from that point of view they are obviously too few, even if each and all of them were a genius in his own way.

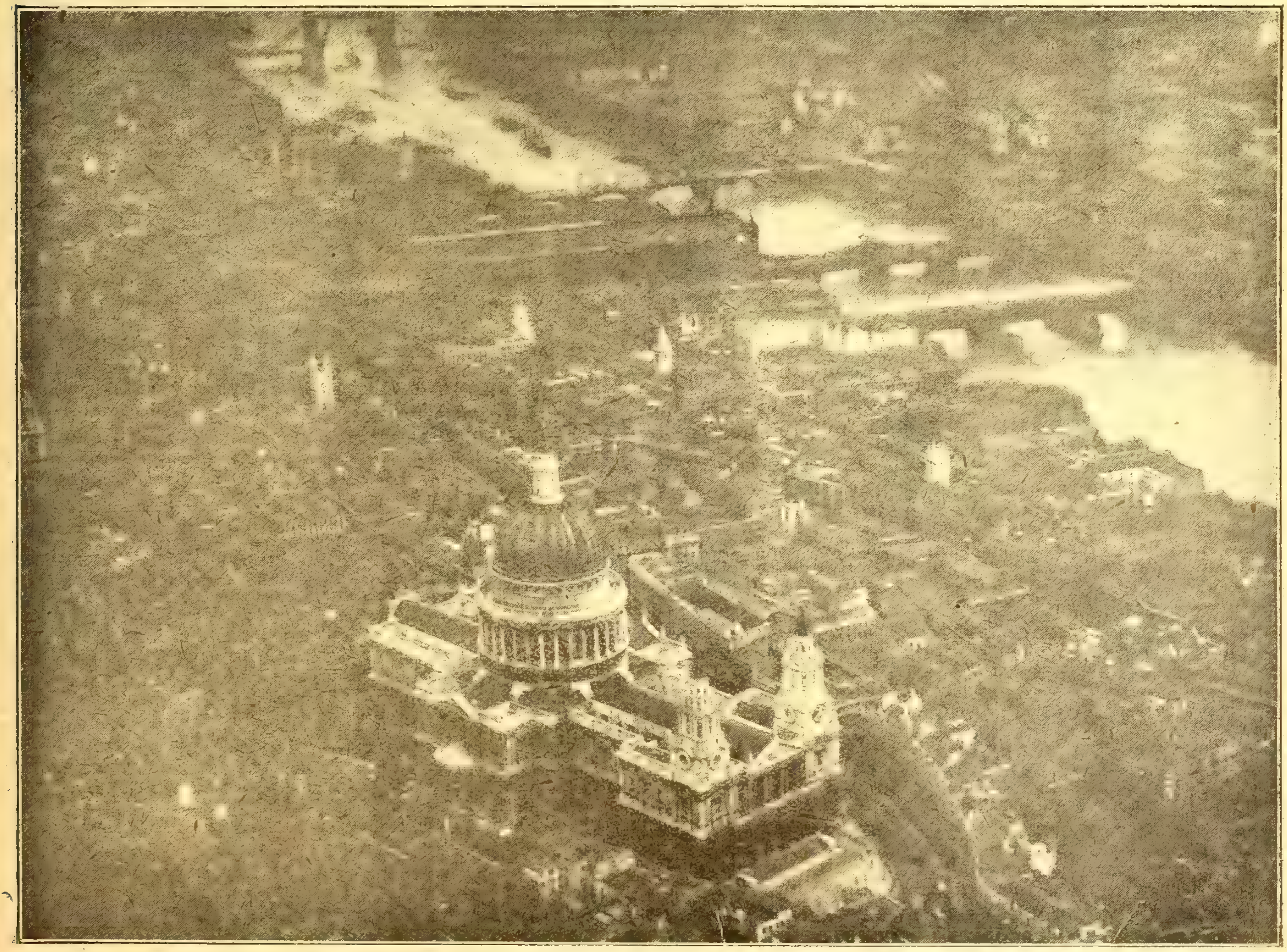
Such complaints of delays and hindrances as are laid against the D.C.A. are not against the individual official, but against the general system, which is due to the parcimony of the Treasury. And where complaints against officials are justified it will frequently be found that the official in question belongs to another Department working in conjunction with the D.C.A., as for example the R.A.F. doctors who turned own the pilot mentioned early in these notes, or incapable A.I.D. officials who remain in the A.I.D. because they cannot get jobs outside and can command influence inside.

As the Synopsis suggests the pay and conditions of service in the D.C.A. are uniformly bad. Yet a number of very good men are accepting very bad money because they believe in Civil Aviation. The more honour to them. But, if the Treasury refuses to pay the D.C.A. Staff adequately and refuses to permit a staff of adequate size, it seems fairly evident that Civil Aviation would progress better without the Department of Civil Aviation.

Such, at any rate, is the opinion of a good many people in the Aircraft Industry, who believe that the money which is being spent on the D.C.A. might be better spent in subsidising air lines.

Things in General.

The Synopsis is ended by a general consideration of work done. This reads as follows :—



St. Paul's Cathedral and the River Thames as photographed from an Airco biplane.

III.—GENERAL CONSIDERATIONS AND CONCLUSIONS.

This brief summary of the work carried out during the last six months, and the organisation of the Department of Civil Aviation has been written as a record of work done. If it appears that a useful purpose will be served it is proposed to issue a further Synopsis at the end of another period of six months. No attempt has been made to suggest the potentialities of civil aviation. The speed at which it will develop cannot be gauged even approximately, but the possibilities are undoubtedly great, and there seems no doubt that when once the postulates of reliability, safety, comfort and economy have been met, as they will be, civil aviation must play an increasingly important part in the development of civilisation.

It is in any case, perhaps, not too much to say that when civil aviation has developed it will be the main reserve of strength from which the R.A.F. will draw in times of stress. The R.A.F. of the future should be capable of rapid expansion and of the organised assimilation of large numbers of personnel and material at short notice. As the mercantile marine reinforced the Navy during the war, so should civil aviation be regarded as the potential reserve of the R.A.F. in future crises. This source of supply can only be regarded as satisfactory if civil aviation is in itself a healthy and well-developed body. The building up of such a body on a true basis is largely dependent upon the growth of a steady demand for quicker communication. Irregular and spasmodic demands keep the cost of such communications at a high figure, and do not, therefore, assist development.

The carriage of mails promises to be one of the most important and regular demands which can serve to develop civil aviation, and to place aerial transport concerns on a firm footing. The future of aerial mail services lies on those routes where a material saving of time can be effected so that a definite commercial advantage may be obtained. In England, railway communications and distances are such that letters posted at the end of the business day can be delivered early next morning at almost every large town by the regular train services. The Postmaster-General is doubtful, therefore, whether the demand for express mails during the day-time between the more distant towns in the United Kingdom is likely to be sufficiently extensive to meet the considerable expense of running such a service for mails only. But if commercial services were established for passengers and goods, the opportunity would be taken to utilise them for express letters.

The line of development of aerial mails would seem to lie more on the continental and Imperial routes where the long distances give more scope for the element of speed. For example, in normal times the ordinary time of transit by railway is 36 hours to Turin, 48 hours to Rome, 23 hours to Berlin, 58 hours to Christiania, and 24 hours to Berne. Over such distances the potential saving by aerial transport is considerable. If such acceleration could be obtained, and regularity of service kept up, sufficient correspondence might be attracted to enable the extra fee to be fixed at a relatively small figure. When regular services to extra-European countries become practicable, the gain in time will be still more marked.

The more such services can be brought into being, the larger is the area over which the overhead charges are spread, and the lower becomes the cost of each additional service which automatically produces an increased demand for such service on routes where high cost has hitherto negatived the desire for speed.

It has been the object of the Department to ensure the safety both of the flying and non-flying public, without imposing irksome restrictions on the various firms concerned. In numerous problems on which technical advice has been required, the Department of Civil Aviation has received the assistance of the directorates of research and aeronautical inspection of the Department of the Director-General of Supply and Research, which is a separate Department in the Air Ministry from that of civil aviation. Hitherto all machines employed by civil aerial transport firms have been converted war machines, and although numerous new types are on the stocks, it may be said that no true commercial machine has yet appeared. Divergencies in type and construction between service and civil aircraft will, however, rapidly appear.

Partly owing to the difficulty of determining the future composition of the R.A.F., and the consequent uncertainty of what aerodromes will be required by the Service, it has not yet been possible to settle the aerodromes to be retained by the civil side, and to complete negotiations with the municipalities and others concerned. An Advisory Committee has been discussing this and kindred problems, together with the question of Imperial air routes, and their report is expected shortly.

The work of the Department must necessarily be of a pioneer character. The results of its labours—if indeed the foundations of the new scheme of things have been well laid—can only become visible in their entirety in years to come. Had the spade work not been done, however, it is doubtful whether this country would have been able to inaugurate and maintain the first international air services.

It may be questioned whether civil aviation in England is to be regarded as one of those industries which is unable to stand on its own feet, and is yet so essential to the national welfare that it must be kept alive at all costs.

If this question is answered in the affirmative there appear to be three methods of assisting it :—

(1) By means of direct Government subsidies—it is in this way that France has decided to act, and 18,000,000 francs have already been earmarked for this purpose.

(2) By recognising that *at the beginning* the British aircraft industry cannot stand on its own feet, and that to ensure its existence, although foreign to usual British practice, some form of *direct* Government assistance, probably in the shape of a grant to approved aerial transport companies for mileage and weight carried, is a necessity.

(3) By following the principle usually accepted in this country, that if an industry is to survive it must stand as nearly as possible by itself, and that a policy of "doles" is unsound. In this case the assistance given would take the indirect form of the provision of certain "key" aerodromes and shed accommodation at home and on the Empire routes; and the collation and issue of information, including meteorological date, and the provision of communications.

The problem is how best to tide over the difficult transition period through which we are passing. Adhesion to the British principle of independent private enterprise will undoubtedly be right eventually, but if a limited industry is to be maintained—as it must be to meet the requirements of the Royal Air Force—it is for consideration whether it will not be necessary to adopt a combination of (2) and (3) above.

(*Signed*) F. H. SYKES,
Controller-General of Civil Aviation.

AIR MINISTRY, *November 1st*, 1919.

It is interesting to learn that another Synopsis will be published six months hence. It will cover the worst part of the year, including the present months in which our fatuous Postmaster General has chosen to start a London-Paris postal service, apparently with the sole object of demonstrating the truth of his statement some months ago that an aerial post is only 60 per cent. efficient. Therefore the next Synopsis will probably be properly depressing, so as to act as a deterrent on those who are cheerfully preparing for an Aero Show at Olympia in July—very cleverly fixed at the very worst time of the year, so as to interfere with joy-riding, and so late as to preclude any possibilities of orders for exhibitors.

The view that Civil Aviation will be to the R.A.F. in the next war as the Mercantile Marine was to the Navy in this war is optimistic. It assumes that Civil Aviation is going to be a bigger thing than the R.A.F. and very much more efficient. One can only hope that the optimism may be justified.

For once the Postmaster-General is right in suggesting that postal air lines in England cannot pay. It will be noticed, however, that nothing is said about postal lines to Ireland, which would probably pay very well, if letters were charged at reasonable prices and not at that absurd 2s. 6d. per ounce.

A GRAVE MIS-STATEMENT.

There is one grave mis-statement in this section, namely that "hitherto all machines employed by civil aerial transport firms have been converted war machines." The compilers of the Synopsis have apparently forgotten that the Commercial Vickers "Vimy," the F.K. Bat, and the Westland Limousine are commercial machines designed *ad hoc*, and bear no resemblance to war machines.

It is fully consonant with the custom of this country that there should not have been sufficient official encouragement to justify either of these excellent machines being put into production for regular use on air lines. One hears, however, that the Westland Co. have very pluckily put their limousine into production as a speculation, in full faith that there will be a big demand for genuine civil aerial transport machines next year. Is it possible that the Civil Aviation Department is so supremely ignorant as to be unaware of these facts?

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Standing Alone.

The question as to whether Civil Aviation is unable to stand on its own feet and so must be supported in some way as essential to the Nation is one which may be debated *ad nauseam.* One's personal view is that it would be better to cut the Aircraft Industry loose and let it stand or fall on its merits. Hardships in youth give strength to the adult.

But if the Industry is to stand on its merits as an Industry it must be free from special rules and regulations and must only be controlled by the Common Law of the land. That is to say it must not steal, it must not kill, and it must not be a nuisance.

Nevertheless the suggested subsidies are of interest. One suspects Sir Frederick Sykes of having written this particular part of the Synopsis himself. One's own belief is that if subsidies are to be given at all they should be given in the form of direct subsidies to mail-carrying lines only, and that those lines should be left to please themselves whether they build or buy their machines.

Grants to manufacturers or operating firms, except as payment for work done, are unsound and help to keep alive those who are lacking in enterprise. But if the Government agree—as they have done with steamship lines—to hire enough cargo space daily (for mails) to pay for the running of the line, then the firms can carry passengers as well, and every passenger fare will then be pure profit.

One cordially agrees with Sir Frederick Sykes that "adhesion to the British principle of independent private enterprise will undoubtedly be right eventually." But if it is to be right, that private enterprise must be free from official interference.—C. G. G.

* * *

THE DOUGLAS-PENNANT CASE.

The Report of the Select Committee of the two Houses of Parliament inquiring into the Douglas-Pennant case was issued on Dec. 8th as a Parliamentary paper (No. 243). It contains a condemnation of Miss Douglas-Pennant's actions and statements in connection with the W.R.A.F. and her dismissal therefrom almost unrivalled in Parliamentary history. The mass of the public will be pleased to hear that the case is now concluded for ever, and that the Government action in the matter has been completely vindicated. A brief report of the case and the findings of the Committee will be published in the next issue of this news-sheet.

THE MINISTRY OF MUNITIONS AND THE EARL OF ROSEBERY.

The unconscious humours of the Ministry of Munitions do not fade. Recently that department has been advertising Turnhouse Aerodrome for sale by auction. The land on which this aerodrome is situated belongs to Lord Rosebery, who discovered the curious intentions of the Ministry of Munitions apparently by accident. He wrote a letter on Nov. 29th to "The Scotsman," of which the following is an extract:—

"I cannot help being surprised at this [the advertised sale] because I am under the impression that the farm belongs to me, and not to the Ministry. At first this might seem to be due to adoption of Irish methods by our Ministers, but I do not wish to exaggerate and I do not think it is due to lawlessness, but simply to gross carelessness from the fact that the Government, during the war, have so abridged the rights of individuals that its numberless departments have come to the conclusion that these no longer exist."

Apparently he received a reply, the sense of which is given in the following extract from a second letter to "The Scotsman" on Dec. 3rd:—

"I wish I could flatter myself that I understand the unsigned communication which you call the Government reply to my letter. So far as I can follow it, the department claims the right to purchase the land on which they have placed their unsightly buildings. However, from that right to the right to advertise it for sale without communicating with the person who, after all, is the owner, there is a very long step. I still think that for anyone, whether a Government department or not, to advertise the sale by auction of land which does not belong to them is a lawless proceeding and a dangerous precedent. If I were in arrear for rates and taxes I presume that the Government would take some such course. But even then they would be obliged to give me notice. In this case there is not, so far as I can see, a shadow of excuse for their procedure.

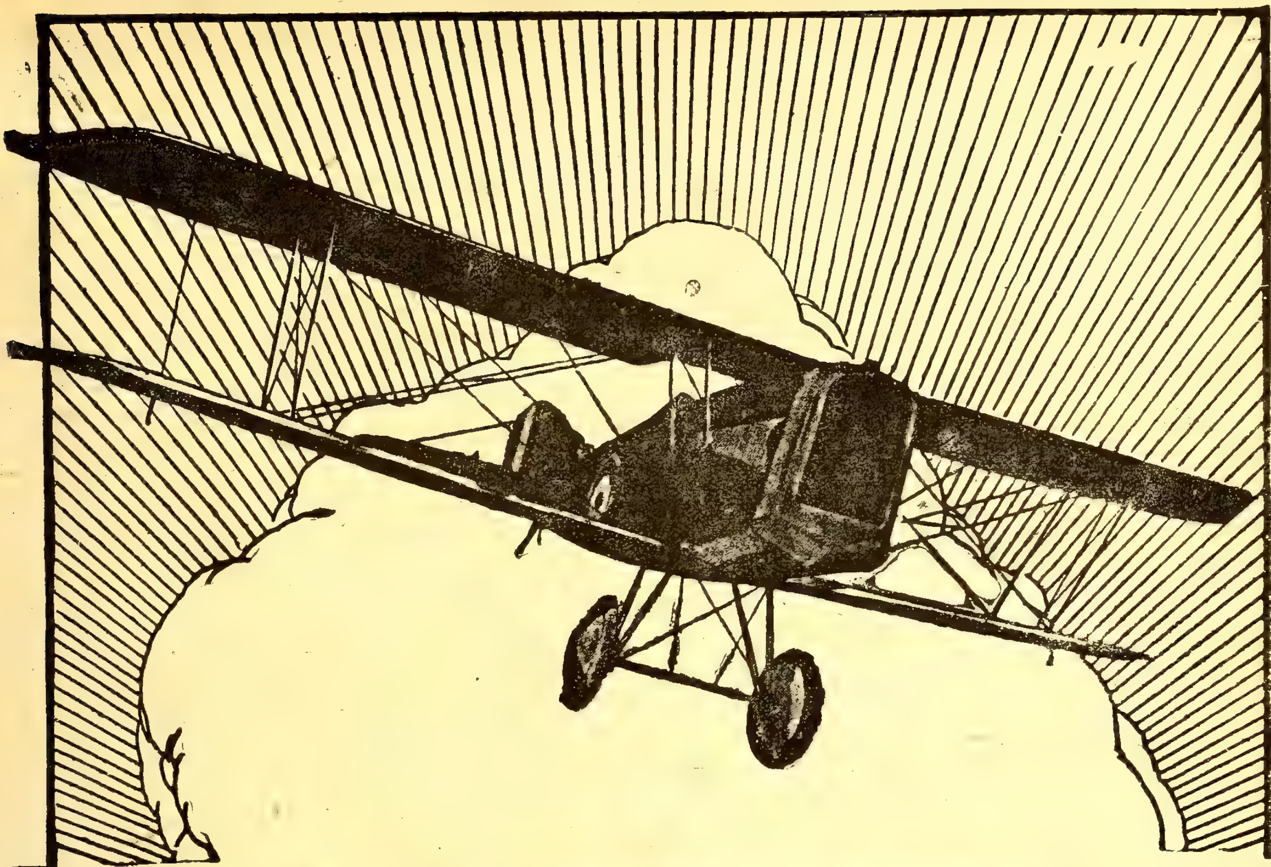
"'Oh, but,' says the department, 'we only offered it by auction to ascertain the value.' This is a privilege denied to individuals, who are supposed to act on their own judgment. But would it console me, if I found that my watch had been sold or pawned, to be answered by the pickpocket that this was only done to ascertain its value? The 'answer' only confirms me in the conclusion of my last letter: 'The Government during the war have so abridged the rights of individuals that its numberless departments have come to the conclusion that those no longer exist.'"

One waits expectantly for the next effort in departmental humour.

[Note.—Lord Rosebery has addressed a communication to Sir Howard Frank. This letter will be dealt with next week.]

SPECIAL BRITISH AIRCRAFT CONSTRUCTORS' ISSUES.

The Paris Aero Show begins on December 19th. On December 17th THE AEROPLANE will publish the first of Three Special Issues devoted to the products of British Aircraft Constructors. These Special British Aircraft Constructors' issues will provide a complete review of the British Aircraft Industry while the French Aircraft Industry is enjoying the advantages of its Exhibition. Copies of these issues should be ordered in advance so as to assure delivery. If desired, copies will be sent by post for 7d. from The Aeroplane Publishing Offices, 61, Carey Street, W.C.2.



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THE ROYAL AIR FORCE AND THE FUTURE.

On Nov. 15th the following letter, headed "Gen. Seely's Resignation," appeared in the "Times" newspaper:—

Sir,—General Seely's resignation of his post as Under-Secretary for Air raises two important questions:—First, is there the necessity for a separate Air Ministry? Secondly, is there the necessity for a separate Air Force? These two questions should not be confused. It may be necessary for the future development of aviation that the Air Ministry should retain its independence. Upon that point I do not feel qualified to give an opinion. But the necessity for the retention of the Royal Air Force on a basis of independence of War Office and Admiralty control seems to me to be very much open to question.

As a chaplain to the R.A.F. I have had considerable opportunity of estimating the efficiency of its organisation and administration. I have come to the following conclusions:—

(1) The discipline and administration of Air Force stations, being in the hands of (in the majority of instances) extremely youthful officers, who have risen to senior rank by skill and gallantry in the air during war service, could be much more efficiently and economically carried out if such stations were under purely military (as opposed to Air Force) control, and commanded by Regular military officers of senior rank.

(2) Military and naval officers, who have transferred to the R.A.F., can never work in harmony, their traditions and methods of discipline being diametrically opposed to one another. The same applies to all ranks.

(3) The training required for naval flying officers is entirely different from that required for military flying officers. A naval or military officer can be taught to fly in six months, whereas a pilot cannot be made an efficient naval or military officer in under six years.

(4) The higher control of the R.A.F. administration could easily be carried out by the War Office with but a comparatively slight increase of personnel, thus releasing a large majority of the staff at present employed at the Air Ministry. Under the existing arrangement every administrative branch is unnecessarily duplicated.

I therefore am strongly of the opinion that the best interests of the nation would be served if the Royal Air Force should cease to be a separate organisation, and that the naval and military branches of the Flying Service should once more be placed under control respectively of the Admiralty and the War Office.

I am, Sir, your obedient servant,

Salisbury, Nov. 13th. Ex-Chaplain, R.A.F.

"Ex-Chaplain, R.A.F.," summarises in his letter the views which are strongly held by a number of well-informed officers who have had experience of the flying services throughout their history. The Royal Air Force in its existing state pleases nobody save a few politicians whose love for publicity directs their daily action and a few officers whose best interests are served by the existence of a separate service in which they can hold positions of relative grandeur.

It has been a happy habit in public life to describe the War Office as a monument of inefficiency designed to spend the nation's money with careless disregard of economy and to win wars unwillingly by the aid of enthusiastic amateurs whose services are accepted ungraciously and rewarded with habitual meanness. In common with all public labels the description is meticulously inaccurate. The public, with a customary lack of precision in its observations, collects readily every scrap of scandal relating to the science of offence and each derogatory detail affecting any department which, having employees in uniform, can readily be confused with the War Office, and then, rendered happy by the mass of unpleasant matter, lays it all at the door of the Secretary of State for War.

The Genesis of the R.A.F.

In accordance with this pleasing principle the primary reason given by the politician agitators for the creation of the Royal Air Force was that the War Office, deeply embedded in the superstitions of past ages, was incapable of giving enlightened attention to the needs of the Royal Flying Corps, whose duties were based on the use of a far-reaching invention of modern times. The Admiralty, secure in the methods and traditions of Nelsonic days, was left undisturbed by abuse. Their lordships at that time had little interest in aviation, did not appreciate its importance in war, and were not unwilling to allow the Royal Naval Air Service to disappear.

Two other major reasons for the creation of a separate Air Force were (i) the alleged necessity for unity of control and (ii) the assumed inability of the War Office and Admiralty to develop and control the vast aerial arms of the future.

Disunited Control.

It is a little hard to understand in what manner unity of control has been gained by the creation of the Royal Air Force. Administration and supply are, it is true, centralised under one staff. Control in operations remains almost exactly as before save that the complication is greater and there are certain obvious disadvantages.

In the operations of war the Air Force detachments serving under the Army or the Navy are directly under the orders of the Military General Staff or of the Naval Higher Command. That is to say, a third service exists which in part of its existence is managed by its own officials and in the remaining part, that for which it was primarily created, is governed by the orders of two other services from which it has an entirely separate *vie intime*.

Administration in the Air Force need not necessarily differ from that common in the Army. The latter service has a well-tried system, the defects of which have been eliminated during the long history of the Army. Supply—though the articles required are different—can be maintained in the same manner as is the supply of guns, ammunition, motor-cars, etc., to the military forces. The aeroplane is rapidly reaching a stage of existence in which the attributes of the various types are similar. There is little to choose between the fighting machines made by any of half a dozen firms, and none can be said in justice to be of much higher efficiency than the remainder. Therefore the simplicity of ordering is greatly increased. The flying arm asks for the desired machines, and the Supply Department executes the order. But this procedure does not necessitate the existence of a separate Ministry. The duties of the War Office and Admiralty are diverse enough to admit of additional responsibilities without courting disaster.

Decayed Aviators.

There is an additional reason why it would be of advantage if the Royal Air Force were abolished and the Royal Flying Corps and Royal Naval Air Service were revived. There are many pilots who become unfitted to fly either from loss of nerve or because of physical disability. These pilots are not necessarily suited for staff or administrative work. In the Royal Air Force there is no other outlet for the energies of disabled pilots. If, on the other hand, the sea and land flying arms were part of the Navy and Army personnel to whom piloting had become distasteful might be transferred to other units or sections of the respective services, provided their mental and moral qualifications were suitable.

Flying arms of the two services would also have a ready source from which to draw personnel. Officers whose devotion to their regiments and the Army are the predominating interest in their lives would willingly be seconded to a flying unit which was an integral part of the Army, yet few of them would go to an independent service even temporarily. *Esprit de corps* is of vital importance in the fighting forces, and it should be fostered and preserved with every care.

London-Paris
Air Express

Mails—Parcels—Passengers

DAILY TIME TABLE.

HOUNSLOW (depart)... 12.30 p.m.
LE BOURGET (arrive) 2.45 p.m.

LE BOURGET (depart) 12.30 p.m.
HOUNSLOW (arrive)... 2.45 p.m.

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By arrangement with the British and French Post Offices an express air-mail is now carried daily on this route. The fee is 2s. 6d. an ounce, over and above the usual rates of postage, and letters which are handed in during the morning in London, up to the times indicated, and at the Post Offices specified below, will be delivered in Paris by about 4 p.m. the same afternoon.

G.P.O., King Edward's Buildings, 11 a.m.; Threadneedle Street, 10.45 a.m.; Lombard Street, 10.45 a.m.; Parliament Street, 10.45 a.m.; Charing Cross 10.50 a m.; W.C. District Office, 11.10 a.m.; W. District, 11.15 a.m.; S.W. District Office, 10.40 a.m.

Passengers

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The rate for parcels is 5s. lb., but in the case of parcels weighing more than 2 lbs., or for regular consignments, much lower rates can be quoted If handed in up to 10 a.m. at the agents specified below, parcels will reach Paris the same afternoon; whereas by land and sea, even if a special "Grand Vitesse" fee is paid, a parcel is several days, and perhaps a week, in reaching its destination.

Full particulars regarding freights can be obtained from Aircraft Transport and Travel, Ltd., 25-27, Old Queen Street, S.W.1., or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C., and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street, and Beak Street, W.; Carter Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; Lep Aerial Travel, Piccadilly Circus (Criterion Corner); and Hernu, Peron & Co., 98-100, Queen Victoria Street, E.C.

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The Desirable C.O.

The first conclusion of "Ex-Chaplain" is that, in order to maintain discipline and all that is therein implied, senior Regular military officers should command stations. Supporters of the R.A.F. say that in many cases senior military officers have failed lamentably when in command of R.A.F. units. There are certainly cases of this kind on record, but I think it will be found on inquiry that these officers were not regarded as efficient when in the Army and only transferred to the R.A.F. because their career in their own service was not proceeding with the distinction they believed to be their due.

Promotion in the Royal Air Force has proceeded mainly on two lines. Those who have fought gallantly and have proved themselves daring leaders in action have become squadron leaders and wing commanders with automatic ease. Skill in the office, on the other hand, has also brought many to high rank. Neither of these classes are necessarily qualified to command any unit. The greatest test of the commander is a period of inaction. In war-time and on active service the defeat of the enemy is a sufficient inspiration to prevent demoralisation in personnel. But peace-time, with its deadly routine, its monotony, its painfully slow rate of promotion, makes difficult the preservation of efficiency and the observance of the amenities of life among men whose physical fitness makes apparent stagnation entirely unattractive. It is then that the commanding officer of long experience and inborn tact is necessary. Such people are hard to find in a new service where, until the present, the main habit has been the breaking of old traditions without the creation of new principles.

There is no need to discuss his second conclusion. Naval and military officers will never work in harmony. It is not the difference in the work so much as the dissimilarity in initial training which sends them along divergent roads.

His third conclusion is also obviously true. The necessary knowledge of the principles governing the operations of the Army differs totally from that of the Navy. Both are vast in extent and their acquisition to the instinctive degree takes years of experience.

His fourth and final conclusion is the most important of all. The staff at the War Office in peace-time, though it could not be reduced, is not fully occupied at all times and could with ease cope with the additional work of directing and administering that share of the R.A.F. which properly would come to the Army where it redivided. A few additional staff officers in each of the great departments of the War Office would be desirable and an additional member of the Army Council would be essential. In matters of Q.M.G. services the requirements of the aerial arm could be met without any additional help.

The Reply Offensive.

But such a letter as that of "Ex-Chaplain" is provocative of replies, and two at least have appeared in the "Times" during the past week. The first of these is signed "Ex-Flight Leader" and bears internal evidence of the truth of many of "Ex-Chaplain's" statements. Dealing with the question of discipline he says :—

"... . the individual flying officer is allowed to exert more initiative than his military brother. He is not so closely fettered by rusty chains of obsolete etiquette and hard and fast rules. Nor is it to be desired. In the career he has adopted he is never called upon to meet a situation which is exactly paralleled by a preceding one; and as a consequence has no need for manuals and regulations written in an age long since passed away. But he does require a leader; and in the very essence of things he prefers a comrade who has proved his worth in 'actualities' to a relic of ancient days, dug up, may be, from a Reserve battalion or an A.M.L.O.'s office, or to an ex-Brigadier whose only excuse for appointment would be, 'We must find him a job somewhere,' and whose interest in aviation began and ceased the night that the Hun bombed his chateau in France."

This passage is offensive without being in the least true. Of all branches of all the fighting services the aerial arm adheres most closely to routine in action. What difference is there between any number of aerial fights? The same acrobatics, the same system of endeavours to outmanœuvre, obtain. In flying each awkward incident is countered in a set manner laid down by experience.

A flying officer in the R.A.F. is concerned with flying alone. He is not responsible for the well-being of his men. He is never charged with their control in action. His life, except during his hours of fighting, is one of ease and comfort. Compare this with the existence of an infantry subaltern either behind the lines or in the trenches. In the first case he must give constant attention to the training, comfort, and amusement of his men. In the trenches he is never free from danger, and he has the responsibility of the lives of the personnel immediately under him.

The manuals and text-books at which "Ex-Flight Leader" jeers are those which, though not "written in an age which has passed away," convey the experience of warfare amassed throughout the centuries to the unfledged warriors produced in a national emergency. As to the "obsolete etiquette" which annoys "Ex-Flight Leader," one imagines it to be those conventions by which the life of the decently born is regulated. Inexperience in these matters often produces annoyance, but in time he himself would have found the social code to be of use.

Later he says :—

Before April, 1918, the R.N.A.S. had enjoyed the pick of machines and engines. With the coming of the Air Force a better and juster apportionment of the good things in aviation ensued, with strikingly successful results on the *moral* and efficiency of the new arm.

As the Royal Air Force only came into existence seven months before the Armistice, any credit for its good work overseas must be given to the Army and Navy from which it was drawn. Can anybody say with honesty that either the *moral* or the efficiency of the R.A.F. were higher than in the R.F.C. and R.N.A.S.?

In a very offensive passage on the War Office he says that "he would indeed be a bold man who dared to affirm that the War Office is competent to handle the Army with thorough efficiency." One must be grateful that courage is not lacking in England to-day, for there are many thousands of officers, all of whom are well qualified to judge, who believe fervently in the efficiency of the War Office and who regard it as having by far the most creditable record of all the Government offices.

The Higher Command of the Army realise that aviation is an essential element of war, and it is inconceivable that they would or will in any way fail to give adequate support to the new arm. Experiments never attracted the soldier, for it must not be forgotten that for each invention which has proved a success there are many thousands which have failed lamentably.

"A Critic in Pall Mall."

The Lord Montagu of Beaulieu also wrote a reply to "Ex-Chaplain, R.A.F.," which appeared in the "Times" of Nov. 20th. The text is as follows :—

ONE ELEMENT: ONE SERVICE.

To the Editor of the "Times."

Sir,—The proposal of the Government to put the Royal Air Force again under the War Office should be resisted by every one who has the future of the Air Services at heart, or remembers the past history of the previous bad system now proposed to be revived.

First of all, I desire to allude to the past. When I was a member of the War Air Committee with Lord Derby and others, in the spring of 1916, my experience then of the difficulties in regard to supply and administration which arose from the dual control of the Air Force by the Navy and Army, and the impossibility of harmonious working, led me to resign as a protest against the waste of time, lives, and money under the old system, and in order to bring to public

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notice that the independence of the Air Service was essential for its progress and proper efficiency. The same reasons which led the Government to accept this view hold good to-day.

The Air Force should remain independent, free to work out its own salvation, to create and carry on its own traditions, and alone to be responsible for its own efficiency in offence and defence throughout the Empire.

Then, as now, some Cabinet Ministers and some exalted naval and military authorities were bitterly opposed to the independence of the new force, and some of these authorities had either actively hampered or passively resisted the progress of the Air Force since its early days. Later on three factors compelled the Government to grant the Air Force independence :—

(1) The pressure of both Houses of Parliament and public opinion.

(2) The need of an Air Force for war purposes larger than that which could be controlled by either the Admiralty or the War Office.

(3) The weighty and explosive arguments in London and elsewhere of the Zeppelins, which showed every one that war in the air was a very real and increasingly important part of the great European struggle.

Thus the first Air Ministry and independent Air Force was formed under Lord Cowdray in the autumn of 1917. [All this is history.]

Now what of the future? It would be madness to imagine that the need of an efficient Air Force will be less in future. It will be far, far greater. Both by sea and land, air power will become more and more important actually and relatively every year, both in peace and war. And the possibility of sudden, blinding, annihilating attacks by an enemy, without a declaration of war—an enemy panting for vengeance—will grow with every year. Has the War Office knowledge, time, or ability to think out the special problems of the air, or administer efficiently this novel, peculiar, and wonderful force, whose pilots must always be pilots before they are sailors or soldiers, brave beyond telling, and reckless in initiative to the verge of insubordination? Of the two I would rather put them under the Admiralty, where initiative is understood, and insubordination, if successful, winked at.

And, Sir, it should be enough for most people to know that General Seely has resigned on this most important question of principle. There has never been a more capable Chief of the Air Ministry, one with more vision, experience, practical knowledge, and belief in the future of the Air Force. He has been Secretary of State for War, still is a member of the Imperial Defence Committee, and has worked the Air Force under both systems, dependent on the War Office and independent of it.

And, finally, let us remember that while we are all war weary, war is still possible, even probable, in the future. Germany is crippled on the sea and on land. In the air she can build up—and is building now—a force for peaceful commerce which in 24 hours could be used for war with deadly effect. The first week's air warfare may decide the next war.

Any independent Air Ministry, though its estimates and personnel be small, is preferable to no Ministry at all, and to the overshadowing and deadening influence of another Department. Three years ago I wrote, "One element : one Service." That, Sir, is as true a motto to-day as then.

Yours faithfully,

House of Lords, Nov. 10th. Montagu.

It is written in the manner one would expect from Lord Montagu of Beaulieu, a nobleman who has played with the problems of the internal combustion engine and its application as his ancestors played with politics and literature in the centuries which now are dead. Gifted with mental activity above the average and possessed of talents which suggest the kindly intervention of fairies at his birth, he, like Philippe, Duc d'Orleans, Regent of France, lacks the one inborn gift which would enable him to put his powers to their finest public use.

He speaks of his membership of the War Air Committee in 1916 and his resignation because of the "impossibility of harmonious working." Has there ever been a Committee which succeeded in initiating direct and prompt action in time of war? Is it possible to find agreement in councils on which soldiers and sailors sit with equal powers? The answer is surely "No." One would suggest that the real failure indicated by Lord Montagu's letter was that of the Committee. Had the R.F.C. and the R.N.A.S. been less hampered by the interference of Committees and Boards manned by political and scientific theoreticians their work would have been simpler, the confusion would have been less.

Later in the letter he admits that exalted authorities were in bitter opposition to the formation of the Royal Air Force. Who is to say that these authorities thought with less wisdom than the heterogeneous band of minor politicians, Fleet Street journalists, and disgruntled aviators who brought about the formation of the Royal Air Force?

The Three Factors.

He gives three factors in the compelling of the Government in the matter of the birth of the Royal Air Force. His first matters little, as Parliamentary and public opinion are swayed easily by multitudinous extraneous passions uncontrolled by pure reason or logic, and both were ever ignorant of questions affecting military science.

His second is a matter of opinion. A War Office designed to direct and maintain an army of a million men satisfactorily produced and controlled forces seven times that number. Is it reasonable to assume that the relatively small addition of an aerial arm would bring about the disintegration of the War Department whose war experience had brought it the power to think easily in millions, an attribute rare in all other departments save the Treasury?

The third factor is curious. According to this the air raids over England assisted in the birth of the Air Force. The war is responsible for many strange midwives. It is odd in view of this argument that the anti-aircraft defences of this country were a part of the Army, commanded by a major-general, assisted by an exclusively military staff. It will be generally admitted, I think, that those defences were effective, and that the despised War Office has at least one considerable success to record in its annals.

The Seely Touch.

There is the true spirit of General Seely in a later passage of his lordship's letter :—"Has the War Office knowledge, time, or ability to think out the special problems of the air or administer efficiently this novel, peculiar, and wonderful force, whose pilots must always be pilots before they are sailors or soldiers, brave beyond telling, and reckless in initiative to the verge of insubordination? Of the two I would rather put them under the Admiralty, where initiative is understood, if successful, winked at."

That blind eye of Nelson is still doing its deadly work! It is consoling to note that Lord Montagu realises the connection between his form of initiative and insubordination. "Unity is strength," and insubordination (even in the "initiative" form) is destructive of "unity." There are a few cases of insubordination which have brought about great and effective results in action. We hear of these. They are well advertised. But nothing is said of the "initiative" which has brought about countless disasters because of its destruction of the unity essential in war. The use of intelligence is vastly more important in hostilities than is careless, self-satisfied "initiative." The soldier who understands the principles of his profession and is capable of applying them on all occasions shows initiative of the true order. He is the type of soldier to be encouraged, and the records of the war show that his class is large. On many occasions the tide of battle might have turned in our favour had pilots and observers in all cases carried out their orders strictly, before entering into little campaigns of their own, which, however attractive, were nevertheless useless to their country.

Lord Montagu ends his letter with the phrase, "Three years ago I wrote, 'One element : one Service.' That, Sir, is as true a motto to-day as then." It is surely

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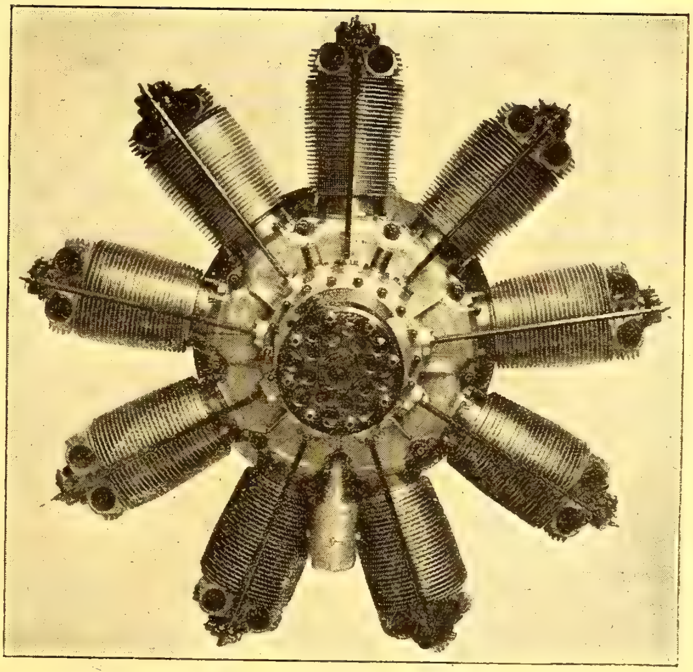


"Supreme in Power for Weight."

a little unkind that his lordship in his disbelief in the qualities of the soldier and sailor should wish to deny them the right to breathe!

Other letters in this correspondence appeared on later dates. The Lord Sydenham, than whom there have been few greater administrators in the history of the Empire, wrote to the "Times" on November 29th and Dec. 5th, supporting the existence of a separate Air Force. In the first letter written to support Lord Montagu he says, in essence, that the Air Force "has a psychology of its own, and it will never reach the full measure of achievement unless it develops a distinct air policy and is trained in peace and directed in war by flying men." His second letter emphasises the importance—according to his school of thought—of the claims of the Royal Air Force to complete independence. "There is greater reason for independence in regard to the R.A.F. than in regard to the Army and Navy."

Admiral Sir Reginald Custance and Maj.-Gen. Sir John Davidson also wrote letters on this subject.

By far the clearest and most convincing contribution to this discussion is a letter from Maj.-Gen. Guy Dawnay which appeared in the "Times" on December 5th. The following extract will explain itself and the general trend of the whole letter:—

> Only by the very fullest measure of co-ordination will it be possible to fit the Air Force into its proper place in the complete military (which, of course, includes naval and aerial) machine. And further, to each arm or service its own tactics; but it is a main essential that air forces working with Navy or Army should be thoroughly familiar with, should have most detailed knowledge and understanding of, naval and military tactics respectively. Moreover, as strategy is all one, there must be no risk of an independent Air Service devising divergent or unrelated theories in the region of strategy, or even in the borderland of "grand tactics." But these desiderata cannot be ensured without either a combined Ministry of Defence or, as General Davidson urges, a Joint General Staff, or both; nor without a most comprehensive scheme of attachment of Air Force *personnel* for thorough training with the older Services.
>
> On the second point—the provision for the Navy and the Army of efficient organs of their own—what is the position? Of the Navy I shall not presume to speak, but the outlook, at least as regards the Army, is dubious. In the sense in which cavalry used to be called "the eyes of the Army," aircraft rather may now be so called. But if aircraft are the eyes of the Army, the Army has no eyes of its own. Yet in modern war eyes of its own are more than ever necessary; it is no longer mainly a matter of strategical or tactical reconnaissance, for modern artillery requires eyes of distant vision incessantly. In ten years' time, will the young Air Force officers know enough about warfare on sea and land, enough about naval and military tactics, to undertake reconnaissance efficiently for Navy or Army? In ten years' time, will they know enough of artillery on sea or land—highly complex subjects—to be able to co-operate with that arm afloat or ashore to fullest advantage? Ten years' complete independence without some exceedingly strong co-ordinating factor might easily produce a dangerous loss of efficiency in co-operation. No one who saw the working of the Dardanelles Expedition from within can disguise from himself that, in spite of the most loyal, admirable, and unbroken harmony between Navy and Army in that instance, considerable obstacles are placed in the way of perfect co-operation between two Services when mutual understanding of the tactical views and requirements of each other is not complete throughout, when the staff systems of the two are utterly different, and when the heads of either may report independently to independent Ministries at home.
>
> The creation of an independent Air Ministry after the early part of the war may have been the best means of coping with a very difficult situation at a time of great stress. But, as Admiral Custance indicates, the decision appears to have been taken mainly on grounds connected with administration, and such grounds are not the essential. As for the desirability or otherwise of its continued independence, the only body fully competent to advise would be the Joint Imperial General Staff, for which General Davidson asks, and which, as he truly says, could be established without delay. In the absence of a Defence Minister, it would report presumably to the Committee of Imperial Defence. Such a Staff would also consider, and would alone be fully competent to recommend, means for securing to the Navy and the Army necessary organs which the present divorce of the Air Force seems to withdraw from them; or, alternatively, means for promoting and maintaining full efficiency under the existing system if possible.

The Air Question is not settled yet. Like Home Rule, it may serve to wreck Governments, to make or break political reputations. The creation of new Ministries has during the war been regarded as the panacea for all ills, the ointment which cures all diseases.

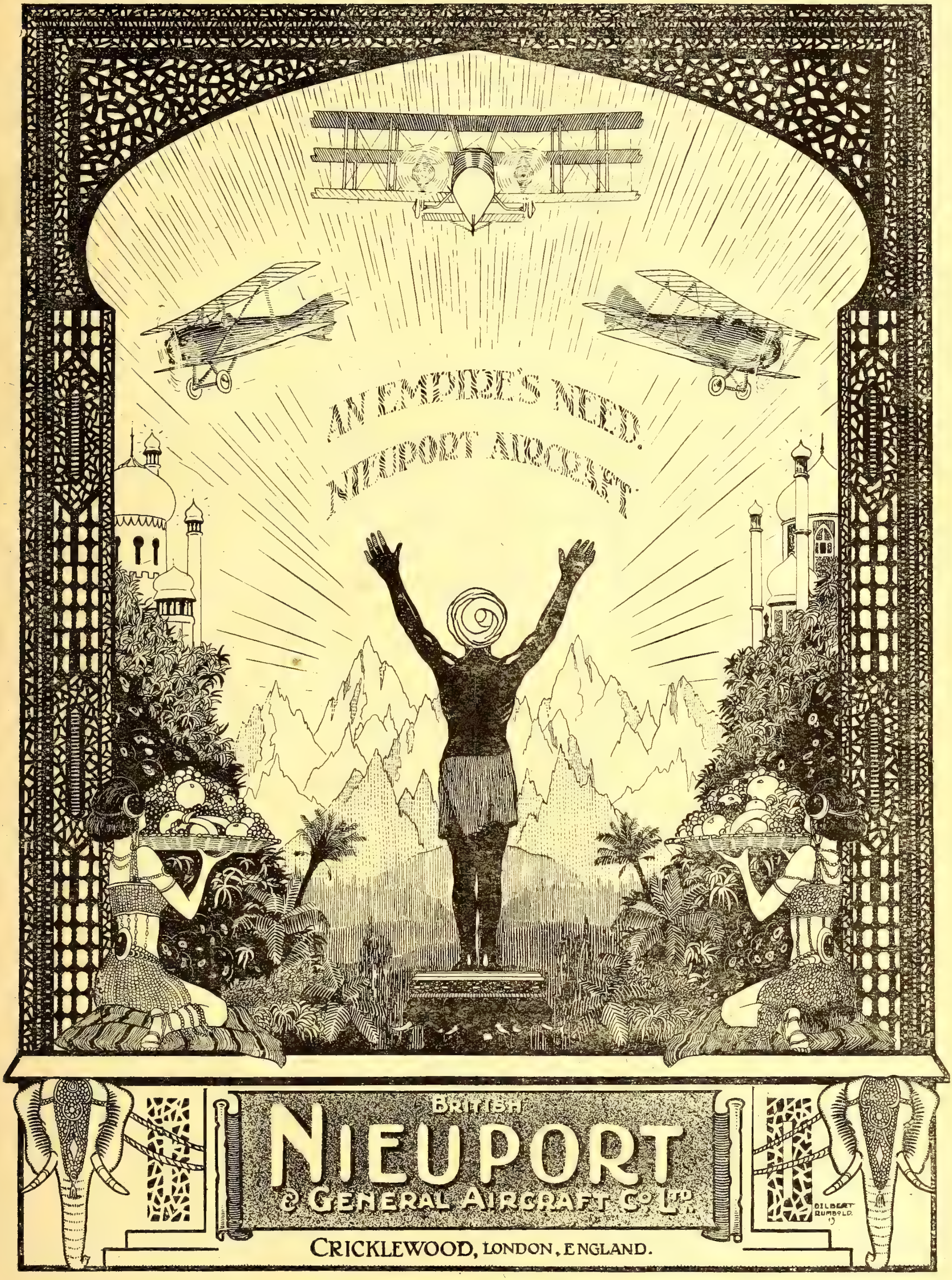
We may perhaps hope that peace will lead to simpler decisions and that bureaucracy may be induced to depart from a country in which it has never been popular. A surer cure for political evils of the present day may perhaps be found in a reduction in the number of Ministries, and among the first to go—as a political redundancy—should be the Air Ministry.—W. E. DE B. W.

THE PARIS AERO SHOW.

M. André Granet, Commissaire-General of the International Exposition of Aerial Locomotion in Paris, which opens on December 17th, intimates that by decree of the President of the Republic, dated November 8th, the location of the Exhibition in the Grand Palais has been constituted a entrepot reel for purposes of customs.

That is to say, for all intents and purposes the Grand Palais becomes a Bonded Warehouse, and all exhibits therein are free from customs duty so long as they remain there. Consequently machines sent from abroad to be exhibited at the Grand Palais can be despatched direct to the stands allocated to them under the ordinary International transit regulations by means of all offices open for such purposes.

The new "W.8" Type Handley Page Biplane (two 450 h.p. Napier "Lion" engines), which, on its maiden trip to Paris on Dec. 4th, completed the journey in 2 hr. 10 min.



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NAVAL & MILITARY AERONAUTICS

[The official "Gazettes" and Personal Notices will be found on page 1942.]

GREAT BRITAIN.

FROM THE "COURT CIRCULAR."

Buckingham Palace, Dec. 3rd.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning. The following were severally introduced into the presence of His Majesty, when the King invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted:—

The Most Excellent Order of the British Empire (Military Division).—Dame Comdr.—Dame Helen Gwynne-Vaughan, W.R.A.F.

The Most Distinguished Order of Saint Michael and Saint George.—Companion.—Wing Comdr. Geoffrey Brierley, R.A.F.

The Most Excellent Order of the British Empire (Military Division).—Commanders.—Miss Josephine Fairfield, R.A.F.M.S.; Brig.-Gen. Robert More, R.A.F.; and Wing Comdr Douglas Powell, R.A.F.

Officer.—Lieut.-Col. Donald Cameron, R.A.F.

His Majesty then conferred decorations as follows:—

The Military Cross and the Distinguished Flying Cross.—Capt. Frederick Haney, R.A.F.

The Military Cross and the Air Force Cross.—Capt. Oliver Stewart, R.A.F., and Flying Officer Bernard Smith, R.A.F.

The Military Cross.—Capt. Charles Denning, R.A.F.; Lieut. Eric Varley, R.A.F.

The Distinguished Flying Cross and Bar.—Capt. Richard Hilton, R.A.F.

The Distinguished Flying Cross and the Air Force Cross.—Flying Officer John Stubbs, R.A.F.

The Distinguished Flying Cross.—Sqdn. Ldr. Maurice Le Blanc-Smith, R.A.F.; Capt Harold Hillier, R.A.F.; Flight Lt. Noel Keeble, R.A.F.; Capt. William Leete, R.A.F.; Flight Lt. Humphrey Leigh, R.A.F.; Lt. Edgar Harris, King's Royal Rifle Corps, attached R.A.F.; Lt. John Hodgson, R.A.F.; Flying Officer Thomas Horry, R.A.F.; Flying Officer Frederick Hunt, R.A.F.; Lt. William Hurrell, R.A.F.; Observer Officer John Kendrick, R.A.F.; Lt Ralph Keys, R.A.F.; Lt. John Latchford, R.A.F.; and Flying Officer George Lingham, R.A.F.

The Air Force Cross.—Wing Comdr. Reginald Rodwell, R.A.F.; Sqdn. Ldr. Charles Nicholas, R.A.F.; Maj. Maurice Noel, The King's (Liverpool Regiment), attached R.A.F.; Maj. Leslie Peter, R.A.F.; Maj. Sebastian Smith, R.A.F.; Flight Lt. Lionel Payne, R.A.F.; Capt. Lawrence Sloan, Cameron Highlanders, attached R.A.F.; Lt. Ralph Park, R.A.F.; Lt. Francis Silwood, R.A.F.; Lt. Harry Slingsby, R.A.F.; Lt. Edward Sullock, R.A.F.; and Sec. Lt. Eric Priest, R.A.F.

Buckingham Palace, Dec. 4th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted:

The Most Distinguished Order of Saint Michael and Saint George and the Distinguished Service Order.—Companion.—Wing Comdr. Andrew Board, R.A.F.

The Most Distinguished Order of Saint Michael and Saint George.—Companion.—Group Capt. John Becke, R.A.F. (also received the Air Force Cross).

The Most Excellent Order of the British Empire.—Officer.—Military Division.—Lieut.-Col. Max Freeman, R.A.F.

His Majesty then conferred decorations as follows:—

The Military Cross and Bar.—Flight Lt. Arthur Jones-Williams, R.A.F.

The Military Cross and the Distinguished Flying Cross.—Flight Lt. Vivian Champion de Crespigny, R.A.F.

The Military Cross.—Capt. Stuart Cole, R.A.F.

The Distinguished Flying Cross.—Capt. John Middleton, R.A.F.; Capt. Horace Porter, R.A.F.; Flying Officer Edward Arnold, R.A.F.; Flying Officer Geoffrey Bailey, R.A.F.; Lt. Eric Furlong, R.A.F.; Flying Officer Malcolm MacEwan, R.A.F.; Flying Officer George Machin, R.A.F.; Flying Officer Ian McDonald, R.A.F.; Flying Officer John Milne, R.A.F.; Flying Officer George Moffoot, R.A.F.; Flying Officer Arthur Newman, R.A.F.; Flying Officer Jaffrey Nicholson, R.A.F.; Flying Officer George Pargeter, R.A.F.; Lt. Joshua Parke, R.A.F.; Lt. George Pitt, R.A.F.; Lt. Robert Reece, R.A.F.; Flying Officer Frederick Stevenson, R.A.F.; and Lt. Frank Stott, R.A.F.

The Air Force Cross.—Sqdn. Ldr. Albert Butler, R.A.F.; Sqdn. Ldr. Ernest Wilberforce, R.A.F.; Capt. Henry Kendall, R.A.F.; Flight Lt. Edward Pretyman, R.A.F.; Capt Bernard Windeler, R.A.F.; Capt. Arthur Wright, R.A.F.; Capt. William Wright, R.A.F.; Flying Officer Frederick Hyde, R.A.F.; Lt. George Sewell, R.A.F.; Lt. Frank Taylor, R.A.F.; Lt. Leslie Taylor, R.A.F.; Lt. Richard Wainwright, R.A.F.; Lt. George Waugh, R.A.F.; Flying Officer Edward Westall, R.A.F.; Lt. Henry Whitby, R.A.F.; Flying Officer Archer White, R.A.F.; and Flying Officer Cecil Wigglesworth, R.A.F.

NAVAL.

Regression!

The Admiralty has approved the removal of the kite-balloon platform and the replacement of the main mast on all sloops proceeding on foreign service, or with the post-war fleets.

Aviation in the Baltic.

According to the correspondent of the "Morning Post," at the end of November the British air stations on the shores of the Gulf of Finland were dismantled and moved onto the warships. This fleet will, it is expected, remain in the Gulf during the winter, using Reval as a base.

MILITARY.

The War in Afghanistan

The following is extracted from a telegram despatched from India on Dec. 1st. The telegram gives some particulars of the Afghan campaign, but it is uncertain whether the telegram is official:—

"Air operations against the Mahsuds continue. On Nov. 27th seven tons of bombs were dropped and 8,000 rounds of small arm ammunition fired. On Nov. 28th three and a half tons of bombs were dropped and 5,200 rounds fired. Good results were obtained."

Some sections of the Mahsuds have now definitely asked for peace owing to the air raids, but their request has been refused.

The Mahsuds' villages are still being bombed, and will probably be further intensified in the near future if no general submission is made. On Nov. 22nd Sarwakai and Kot Kai were bombed.

AIR FORCE.

H.R.H. the Prince Albert.

On Dec. 2nd Capt. H.R.H. the Prince Albert, K.G., R.A.F., was admitted to the Order of Freemasons at Princes Galleries, Piccadilly, in the presence of the Prince of Wales, many Grand Lodge officers, and a distinguished company of Freemasons generally. Surgeon Lieut.-Comdr. Louis Greig, R.N. (Wing Comdr., R.A.F.), was also initiated. An emergency meeting was held for the dual ceremony.

This was performed by the Pro Grand Master, Lord Ampthill (in the regrettable absence of the Grand Master, the Duke of Connaught), and the Master of the Lodge, Vice-Admiral John B. Eustace, R.N.; while the Deputy Grand Master (the Right Hon. T. F. Halsey) addressed the candidates.

Prince Albert was presented as "Lieutenant His Royal Highness Prince Albert Frederick Arthur George, K.G., R.N. (Flight Lieutenant, R.A.F.)," and his Equerry as "Surgeon-Lieutenant-Commander Louis Greig, M.V.O., R.N. (Wing Commander, R.A.F.)."

Owing to his connection with the Navy Prince Albert has joined the Navy Lodge, No. 2,612.

An Honour for Lord Londonderry.

St. James' Palace, Dec. 5th.

The King has been pleased to approve of the following appointment:—

The Most Hon. the Marquess of Londonderry to be a Knight of the Most Noble Order of the Garter.

The Demobilisation of the W.R.A.F.

The Women's Royal Air Force was finally demobilised on Dec. 4th. The W.R.A.F. are the first women's corps to have a Women's Comrades of the War Association, and it is intended that this shall be run on the most democratic lines and have branches practically everywhere that demobilised "Wrafs" are to be found. The committee consists of four officers and six other ranks, and the president is Dame Helen Gwynne-Vaughan. There are an officer secretary and a "ranker" secretary.

BELGIUM.

The Chevalier Lt. Willy Coppens, the Belgian aviator, has been appointed Air Attaché to the Belgian Embassy in London. He was awarded both the Cross of the Order of Leopold and the Cross of the Order of the Crown.

CZECHO-SLOVAKIA.

The Italian correspondent of The Aeroplane writes:—

Lieut. Lepar and a non-com. officer of the Bohemian nationality crashed inexplicably when flying an ex-Hun biplane near Milevek on Nov. 26th. Lieut. Lepar had been with Pégoud in France and had the distinction of having piloted that great man. On the same day another machine, with an army pilot, Provaznic by name, and also a mechanic on board, fell to earth at a place called Tabor, in Bohemia, both men being lost.—T. S. H.

HOLT LANDING LIGHT

NOTICE:—It has come to the notice of the Yorkshire Steel Co., Ltd., that the DISPOSAL BOARD is offering Holt Landing Light Equipment for sale. It is necessary, therefore, to point out that this apparatus is Patented in England and various foreign countries and can only be used under Licence from this Company. Further, the Landing Flares are only guaranteed by us for six months, while those offered for sale are much older and their use would entail very serious risks to Passengers and Machines.

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18 NEW RECORDS

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DENMARK.

The Danish correspondent of The Aeroplane writes :—

One of the Danish army pilots ordered to France for advanced training, Serjt. Johansen, has been killed at the Le Bourget Aerodrome, his Breguet biplane catching fire in mid-air.

A Gift.

As a token of appreciation of the kind reception received at the Copenhagen naval air station, the Danish-American millionaire, John Larsen, has presented the Navy with his new, large Curtiss flying-boat, with self-starter, said to be the only one of its type in Europe.—Hi.

FRANCE.

A Reorganisation of the Aerial Arm.

On Jan. 1st next the present Groups of Escadrilles will be formed into Aviation Regiments. All officers at present in the aerial arm who desire to be posted to the new regiments on the administrative staffs are requested to submit their names to the Director-General of Military Aeronautics, stating in order of preference the garrisons to which they wish to be attached.

A Medical Board.

The Directorate of Military Aeronautics has opened a temporary Medical Board at 5 Square du Trocadéro, Paris, for the examination of candidates for military aeronautics. This Board will at a later date be transferred to Le Bourget. Candidates who fail to pass the required tests will return to their original arms of the service.

The Resignation of Capt. Heurteaux.

Capt. Heurteaux, having been elected to the Chamber of Deputies, has been placed on the reserve cadre of the 9th Hussars, but remains also seconded for service in aeronautics.

Refresher Courses for Reserve Pilots.

It has been decided that retired and demobilised military aviators will be permitted to take refresher courses on military machines, and that during these courses their expenses will be paid. Premiums will also be given under stated conditions. On the other hand, it is not stated as yet whether or not these pilots will, in case of accident, be entitled to consider themselves as under orders, and so be eligible for pension or gratuity.

A Burglary.

According to a Reuter report of Dec. 5th 40 aeroplane magnetos and a large quantity of tools have been stolen from the French aviation camp at Villacoublay.

A Naval Flight.

Lieut. Lefranc, a French naval officer, who left St Raphael recently with a squadron of seaplanes to fly to Dakar (West Africa), completed the journey between Valencia and Almeria, a distance of about 440 kilometres (273 miles), in four hours.

A Flight to Morocco.

Commandant Vuillemin and Lieut. Dagneau, who both acquired merit recently in a flight from Paris to Cairo and back (though the latter was prevented from completing the return journey by air), reached Algiers on Dec. 2nd, having flown from Alicante, a distance of 340 miles, in 2 hr. 40 min.

They are to be under the orders of General Nivelle, and will make reconnaissances over the Sahara with a view to arranging an aerial link between the French military posts in that area.

An Accident in Turkey.

Two French military aviators, Lieut. Quinquandar and Adjudant-chef Serge Iline, flying on the military aerial post between Bucharest and Constantinople, were lost in a fog on Dec. 5th, and flew into the Chirchiloul hill in the Burzen district. The pilot and passenger were killed instantly.

HOLLAND.

An order has been issued by the Commandant of the Dutch Aviation Department forbidding further flights in Rumpler aeroplanes. It is understood that there have been four fatal accidents on these machines recently.

A Proposed Flight.

Lieuts. W. C. Versteegh and A. K. Steup intend to fly from Holland to the Dutch Indies together in one machine. Probably before starting on the journey these officers will, together with Lieut. Kopper, pay a visit of a month or so to England in relation to this big flight. It is the intention of the Dutch Government to send the three officers to England at the nation's expense.—G. M.

ITALY.

The Italian correspondent of The Aeroplane writes :—

Bad Weather Flying.

A squadron of seaplanes flying from Milazzo *via* Taranto to Naples—probably some of the machines from the seaplane station at the former place which, as mentioned recently, are extending their postal services—came to grief owing to running into foul weather and a violent wind along the Calabrian coast. According to one report, an F.B.A., No. 3250, with Nav. Lt Panarello in command and Seaman Santina pilot, came down and was sunk by the waves near Siderno. The crew were saved by Serjt. Spoto, who was flying a relief machine. Only two of the five machines were able to continue the journey on to Naples in the teeth of the hurricane.—T. S. H.

ROUMANIA.

A Capture.

It is reported that Roumanian troops have captured a large aeroplane which made a forced landing at Hotin, in Bessarabia, owing to engine trouble. The crew of the machine consisted of two German officers and three mechanics, who had with them 360,000,000 roubles for the Bolshevik troops in Ukraine, a printing machine to print banknotes, and several thousands of jewels of all kinds.

There appears to be a regular air service of this sort running between Germany and Russia. One seems to remember a similar capture made some little time ago.

RUSSIA.

A Bolshevist Haul.

In an official Bolshevist communiqué, dated Dec. 1st, it is stated that in the occupation of Bolshoe-Konushkino four seaplanes were included among the captured war material.

SWITZERLAND.

The Dubendorf Military Station.

Some figures are now available which show clearly the amount of flying carried out by Swiss military aviators from day to day. As far as can be discovered, there are 53 military aeroplanes at Dubendorf and two Albatros biplanes of the Austrian army interned during the war. There are about 35 pilots posted to the station. In the week ending Nov. 2nd the military pilots made 251 flights, totalling in time 79 hr. 8 min. and in distance about 5,950 miles. In the following week, owing to the cessation of aerial posts, the 224 flights made by military aviators only amounted in all to 43 hr. 34 min. flying over a total distance of 3,500 miles. During the month of October, 32 pilots made 1,416 flights of a total duration of 428 hr. 46 min. and a distance of 34,600 miles.

U.S.A.

Prohibited Areas.

Instructions issued by the War Department on Oct. 10th prohibit civilian flying over the vicinity of fortified areas within the boundaries of the United States, including the Panama Canal Zone.

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THE WEEKLY COMMENTARY.

A further instalment of the article on the experimental work carried out at Grain Air Station during the war is printed below, and describes some of the difficulties encountered in connection with the problem of landing machines on the decks of aircraft carriers and the early work of developing emergency flotation gears for land machines for use over the sea.

A paper by Major T. Vincent Smith, R.A.F., which was read before the British Association at Bournemouth in September, is reproduced in this issue.

This paper outlines the history of the war development of wireless communication with aircraft, and gives a vivid idea both of the difficulties which had to be overcome and of the success with which these difficulties were attacked.

Some machines produced by the Kondor Flugzeugwerke during the war are illustrated in the third instalment of the series on "Recent German War Machines."

A memorandum issued by the Air Ministry, dealing with the supply of instruments for aerial navigation, is reproduced on page 1928.

THE WORK OF THE MARINE EXPERIMENTAL AIRCRAFT DEPOT, ISLE OF GRAIN.—(*continued.*)

By Capt. W. H. Sayers, Late R.A.F.

Reference has already been made to the early experiments connected with the deck landing problem made at Grain. From the middle of 1917 onwards the experimental construction depot at Grain became the centre of experimental work connected with the use of aircraft from ships. Deck landing arrangements were a part only of the general problem attacked.

Arresting Gears.

In the earlier days of experiment it had been assumed that the problem of arresting the forward motion of the landing aeroplane in the limited space available was the crux of the problem. Were this really the case the problem had been fairly easily solved, and the original wire rope landing deck, which consisted really in the provision of an artificial hill of rapidly increasing slope formed by a series of longitudinal cables anchored near the stern and rising in a catenary curve to a bridge some 30 feet above the deck level and about 100 feet farther forward, would probably have sufficed for many purposes.

So, too, with the later retarding device wherein a number of transverse wires attached at each end to sandbags, which were picked up successively by some form of hook on the machine as it traversed the deck and thus applied a continuously increasing frictional retardation.

Tests were made with this system on a planked landing platform at Grain, and it was found to be quite possible to bring a Sopwith "Pup" to rest in 50 feet from touching with only quite light head winds to assist in the process.

The Real Difficulty.

Unfortunately, actual attempts at landing on the deck of aeroplane carriers demonstrated that the actual retardation on deck was but a small part of the problem, and that the lack of width on deck was a more important matter than the absence of length.

With reasonably high speed ships it was possible to land with very small differences in forward velocity between the ship and the aeroplane, but owing to the generally disturbed air flow near the deck itself—caused by the relative speed of the ship through the air—it was very difficult to keep the machine on the deck, and particularly to keep it straight on the deck after it had lost flying speed.

The result was that having successfully established contact with the deck, the machine would slew to one side and roll over the edge of the deck with far too low an air speed to give any chance of picking up before striking the water, and more than one valuable life was lost through this type of accident.

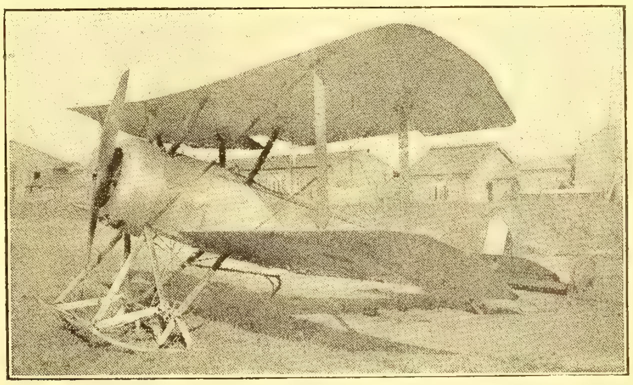
It is to be remembered that the conditions are entirely different from those of a normal landing. With a 10-knot wind, and a 30-knot seaplane carrier, it is quite possible for the aeroplane to be flying at a negative speed relatively to the ship, and it is obvious that a machine may be on the deck with no forward velocity relative to the ship, and yet have an air speed little less than that necessary to sustain it in the air.

Under these conditions the wheels are obviously not rolling on the deck, and if an oblique gust causes the machine to skew, there is some risk of tyres being rolled off the wheels, which usually results in the machine spinning round on the rolled-off tyre. This actually occurred on several occasions, and appears to have been the cause of at least one fatal accident.

Skid Undercarriages.

To overcome this trouble experiments were made at Grain with skids, and a Sopwith "Pup" was fitted with skids attached to the axle in place of wheels, these skids being supported at their fore ends by an extra strut added to the normal Vee undercarriage. The skids were thus sprung in exactly the same way as the usual wheels and the machine so fitted was unexpectedly satisfactory. On any reasonable aerodrome it was possible to get off just as easily as on wheels, and the run after landing was considerably reduced.

The skids were much easier to taxi in side winds, and the performance of the machine was slightly improved.



The First Sprung Skid Chassis on a Sopwith "Pup." Note the hook for picking up arresting cables.

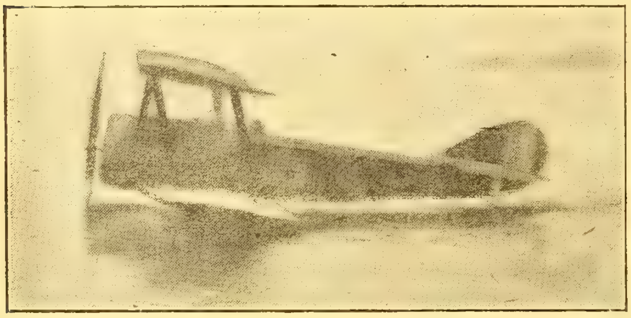
Later a rigid skid chassis was adopted instead of the sprung type—with some appreciable saving in weight and with no ill results.

By way of holding down such a machine to the deck when it had once established contact, tests were made of a series of longitudinal cables stretched fore and aft along the landing deck, and the skids were fitted with projecting catches—on the principle of the dog-lead catch—into which two or more of the stretched wires would enter on alighting, thus positively holding down the machine and limiting the possibility of sideways movement to that allowed by the give of the wires themselves.

Altogether many and various types of arresting mechanism were suggested, designed, and tried at Grain, but, at any rate up to the date of the Armistice, the problem was far from a satisfactory solution.

Flotation Gears.

In the absence of satisfactory arrangements for deck landing, and the lack of seaplanes with a performance approaching that of land scouts, it became a habit to fit ships with Sopwith "Pups" and such-like small machines which could be flown off a deck and attack hostile airships, but which had either to fly back to land when their operations were complete or else flop into the water close to a friendly ship in the hope that the pilot could be picked up. Putting an ordinary land machine into the water practically invariably meant losing the machine, and often the pilot as well, and machines used for this purpose were therefore usually fitted with air bags in the after part of the fuselage to keep them afloat.



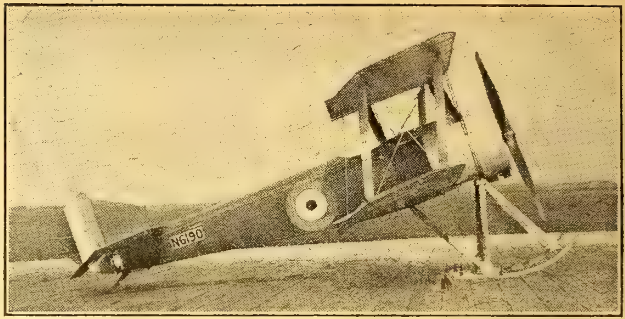
The first alighting on water of a Sopwith "Pup" with air bags and a hydroplane.

Even so pilots found that a machine which floated tail upwards was an uncomfortable refuge in a wintry sea, and the engine generally benefited little by even a short submergence in salt water.

These facts led Squadron-Commander Busteed, while he was yet at Eastchurch, to consider the question of devising light flotation arrangements which could be attached to the normal land machine and would enable it to float right side uppermost, and eventually to produce the emergency flotation gear with which his name is associated.

In its original and simplest form this gear consisted of balloon fabric air bags, circular in section when inflated, attached to the lower wing of any ordinary type of biplane between the leading edge and the front spar. These bags were normally deflated and folded flat against the lower wing surface, to which they were held by a fabric flap permanently fastened along the leading edge of the wing and clipped to the front spar by eyelets which could be simultaneously released by pulling a string from the pilot's cockpit.

When thus folded the air bags merely slightly thickened up the front portion of the wing section, and produced no noticeable effect on the machine's performance.



The Rigid Skid Chassis fitted to a "Pup." The small projections on the skid in each side of the main Vee are horns designed to catch in longitudinal wires along the landing deck.

When it was desired to alight on water, the pilot first pulled the string releasing the flap, and then by turning on compressed air from a standard compressed air starting bottle into an air injector which communicated with the bags inflated the latter to their full capacity.

The inflated bags provided a large buoyancy ahead of the centre of gravity of the machine, and in conjunction with fuselage bags behind the C.G. kept the machine afloat in its normal attitude.

The First Trials.

The first machine on which the arrangement was tried out was a Sopwith "Pup" fitted with a dropping chassis released by the pilot before alighting. On touching the water the fabric on the underside of the fuselage ripped off, the water rushed in, and the machine nearly turned over onto its nose.

To remedy this trouble a stiff three-ply planing surface was fitted beneath the fuselage between the chassis strut attachments. A small plane of duralumin set at a negative angle was attached to the tail skid—in the hope that if it once got into the water the down load on it would hold the tail down.

With these additions the machine was again tried, and alighted successfully at the first trial, and at many subsequent ones.

A photograph showing this machine at the moment of touching is reproduced. The planing board beneath the fuselage and the air bags beneath the wings can plainly be seen Another photograph shows the same machine afloat after several hours' test immersion in the mouth of the Thames.

The first "Pup," successfully fitted with air bags and a hydroplane, afloat after several hours on the water.

This actual machine alighted on water on several occasions and in no case did any part of the machine suffer any structural damage. Naturally it was stripped for examination and recovered between each test. After the first two trials the engine was taken down and overhauled, but thereafter it was found sufficient to wash it out thoroughly with paraffin, inject copious castor oil, and then give it a short run.

* * *

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This interesting little periodical, published by Edgar Allen and Co., Ltd., for the dissemination of news of interest to the users of Edgar Allen's steel, has now reached its third number.

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All those who are seriously interested in the use of steel should apply to Edgar Allen and Co., Ltd., Imperial Steel Works, Sheffield, giving the name of the firm through which their interest arises, and copies will be forwarded to them as they appear.

A DEMENTI.

Rolls-Royce, Ltd., announce that there is no truth whatever in the rumour that they intend to place on the market during the year 1920 a Rolls-Royce chassis of 20 h.p.

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WIRELESS IN THE ROYAL FLYING CORPS DURING THE WAR.

By Major T. Vincent Smith, M.C., R.A.F., M.I.E.E.

(A Paper read before the British Association.)

In the light of modern achievements, it is not easy to realise how profound was our ignorance on the subject of aircraft wireless in August, 1914.

It is only by realising the insignificant amount of data existing at the outbreak of war that the details of the development of aircraft wireless assume a correct perspective.

It was obvious that observing for the artillery was one of the most important services that the Flying Corps could render, and for this purpose efficient communication was of primary importance. Only one machine of those which went with the original Expeditionary Force was fitted with wireless, and though a few had been added by the time I went to France in February, 1915, I found a rather cumbersome signalling lamp the most popular means of communication between air and ground.

Early Types of Apparatus.

The earliest form of spark transmitter we used was of the simplest possible kind, using an accumulator battery and closed oscillating circuit, the inductance of which was common to closed and radiating circuit in the form of the well-known auto transformer.

A wandering plug enabled the closed circuit to be tuned to the aerial, or the aerial could be brought into resonance with the closed circuit by lengthening or shortening.

There was another somewhat similar set made by Leslie Miller, but having an inductive coupling; another squadron was using a French engine-driven set, having the auto transformer coupling and a multiple rotary spark gap.

The power and weight of these three sets were, respectively, 40 watts, 50 lb.; 100 watts, 65 lb.; and 150 watts, 78 lb.

The ground receiving arrangements consisted of an 8-section 30-ft. tubular steel mast, a 150-ft. silicon bronze wire aerial, a rather unwieldy tuner, and two kinds of crystal detectors, also two pairs of Brown's high-resistance 'phones. Two copper gauze mats as counter-capacity completed the outfit. The tuner was eventually replaced by a good and efficient instrument.

A few days after my arrival I was appointed wireless officer to No. 3 Squadron of the 1st Wing, which comprised, in addition, Nos. 2 and 16 Squadrons. Each squadron consisted of 12 machines divided up into three flights of four machines, of which one flight was wireless, the remaining two flights worked with signal lamps.

The End of Lamp Signalling.

There was considerable rivalry between the lamp and wireless as a means of signalling, but the latter soon made the lamp method obsolete, when, owing to the success of the wireless flights, all machines in No. 3 Squadron were ordered to be fitted. The more the use of wireless extended, the greater were the difficulties that arose, but in spite of annoying failures it was justifying itself inasmuch as it would have been impossible to get through anything like the amount of work by other means.

One realised that the whole future of the application of wireless on a large scale in the Air Force in war depended upon the successful solution of the new problems which were constantly presenting themselves.

To do this demanded the fullest possible knowledge of the nature of the work, the conditions under which it had to be carried out, the personnel who did it, and finally investigation into the causes of failures with a view to their elimination.

These were done as far as possible, and by spending two days with each squadron, flying, keeping their machines in working order, and visiting the ground stations with the guns.

My front, which corresponded to that of the 1st Army, extended from Armentières to Mazingarbe, about 25 miles, and contained about 30-40 batteries. It was by far the most active piece of line and embraced the three most important operations of 1915, namely, the battles of Neuve Chapelle in March, Festubert in May, and Loos in September.

The first battle in which wireless became a serious factor was that of Festubert. Our preparations for this battle consisted of observing for the artillery whilst they registered their guns on the trenches and important points within the enemy's lines.

It is also memorable as being the first occasion upon which machines were specially detailed to observe the battle and to report progress by wireless. This work was done by No. 16 Squadron, under Major Holt, and four of their machines fitted with Leslie Miller transmitters kept watch successively all day over the battle.

As the attack did not develop, there was nothing much to report, but the wireless worked quite successfully and the machines remained in touch with their stations throughout the operations.

Foundations were thus laid which resulted in the development of that very important branch of aerial activity known as the close-contact patrol for the purpose of reporting infantry movements.

Another squadron, No. 10, had now been added to the Wing, and, apart from ordinary troubles, jamming or mutual interference steadily increased, but the experience gained by this time enabled one to begin reform and organisation in real earnest, and the first thing done was to standardise the apparatus.

Both for its light weight and simplicity, I chose the No. 1 transmitter and found immediate relief from jamming owing to the smaller power used by it. The effect of eliminating powerful signals was very marked and the simplification through having only one kind of transmitter materially added to reliability.

So much was this the case that all machines in the Wing, amounting to 48 in all, were ordered to be fitted.

Practical Difficulties Overcome.

I redistributed the wave lengths on the following plan:—The three flights of the most northerly squadron were given 100, 180, and 260 metres, the next squadron was given 140, 220, and 300 metres, and so on, alternately, down the line. The beneficial effect of this change was sufficient to meet the large increase in machines.

The transmitter was now taken in hand and a lot of useless connections removed, and the radiating circuit altered by disconnecting the aerial from the top of the inductance and attaching it to a wandering plug, thus enabling the aerial to be loosely or tightly coupled as required. The component parts were assembled in a neat gas-tight box and the inductance calibrated in wave lengths, thus reducing the weight of the whole set to 26 lb., including all fittings, and its bulk by one half. A further addition of 24 machines was made to our Wing. These naturally brought more trouble in their wake, as we now had 72 machines fitted.

To relieve the somewhat severe pressure I received permission to recommend four of my most suitable operators for commissions to take charge in their respective squadrons. This resulted in considerable diminution of failures, but the jamming trouble was again to the fore.

In reviewing the situation, and in the light of past experience, I determined to try the effect of reducing still more the power of the No. 1 transmitter, which was done with almost startling results.

The battery was cut down to three cells and the adjustment of the spark gap and primary make and break very carefully attended to, with the result that the rasping guttural splutter gave place to a pleasing flute-like note.

The effect was truly magical and gratifying, as not only were the operators delighted at the change, but jamming lost many of its terrors. In addition to which, owing to the power being reduced to 20 watts, the trembler and spark gap remained clean and in adjustment for a longer time and the weight of the battery was also reduced.

It was found that the trembler could be made to vary its note within small limits by careful adjustment. This was of great assistance to the operators and the soundness of these principles in the prevention of jamming was amply proved later on, when their development enabled the number of machines capable of working without mutual interference to be greatly increased.

A Sign of Enemy Inferiority.

Evidence of the success of our work was shown unmistakably by the attempt on the part of the enemy to jam us, a sure sign of their technical inferiority, more particularly as they entirely failed in their object.

About this time another very important detail was added to our organisation in the establishment of a squadron wireless control station situated between the guns and the squadron. It was connected to squadron and batteries by telephone and its prime duty was to listen to the machines working with their batteries and to take down as much as possible.

These records formed an invaluable means of locating causes of failure, as the assertion on the part of the pilot that he had sent a certain signal, or the operator at the battery that signals were weak and unreadable, received from the control station definite proof of their truth or otherwise. Another duty was to lay out a signal on the ground indicating to a machine on its way from the squadron to the lines the quality of its signals.

By this means a fruitless journey was saved to a machine whose apparatus was not functioning properly.

Owing to its situation, the control station was naturally freer from jamming than a battery station, consequently it was possible, owing to their being connected by telephone, to accept signals from a machine and phone them to a battery that was for some reason not getting its signals.

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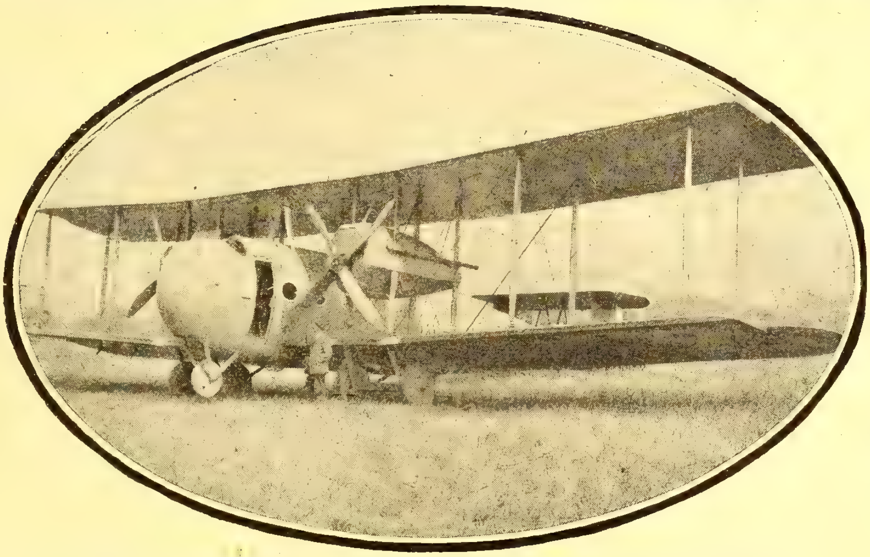

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The first of these stations was started at Vielle Chapelle in May, 1915, though its full uses were not developed until later on.

In July the first introduction of the thermionic valve took place and one was brought out to demonstrate its powers of amplification. It was a Round valve of the soft type, associated with the Round magnifying circuit, and was very delicate in action, requiring considerable training on the part of the operator; but it obviously possessed great possibilities, and I reported accordingly.

Wireless Work at Loos.

Preparations for the Loos offensive in September were now in full swing, and registration of the guns was the order of the day.

Over 600 targets were registered by the machines of the 1st Wing during the week preceding the offensive.

The battle took place and was a great opportunity for proving the use of wireless on a large scale, and it emerged triumphant. In spite of there being about 20 machines always working in the salient to about 60 ground stations with the guns, no serious failure took place.

Lord French's dispatch on the battle said :—"The R.F.C. is becoming more and more an indispensable factor in combined operations. In co-operation with the artillery in particular there has been continuous improvement both in the methods and in the technical material employed. The ingenuity and technical skill displayed by the officers of the R.F.C. in effecting this improvement have been most marked."

The war now settled down again to trench warfare.

About this time another small but effective improvement was made. I found that large capacity accumulators were conducive to failures owing to the mechanics forgetting when they were last charged. By substituting accumulators of sufficient capacity for only one spell they had of necessity to be recharged after every flight. Not only did this eliminate failures due to exhausted accumulators, but the weight of the battery was reduced by 25 per cent. and the whole transmitting set, including all fittings, to 18¾ lb.

The Fire Danger.

Another matter arose demanding earnest attention, and that was danger from fire. Obviously the close association of the electric spark and petrol required that every possible precaution should be taken. A machine may crash when landing or by engine failure when trying to get off. In either case the petrol tank invariably bursts to the imminent danger of the pilot and observer. As a switch might easily be moved in the case of a crash I decided that the only really certain remedy was a complete disconnection of the accumulators from the wireless apparatus by means of a plug. This fitting was made compulsory throughout the R.F.C. and orders issued that no machine was to leave the ground or land again with its battery connected.

So far as I am aware no fire caused by wireless occurred after this.

In February, 1916, I was ordered to organise the wireless repair section of No. 1 Aircraft Depôt at St. Omer.

One of the most important things undertaken by this section was the fitting of all the machines as they arrived from England in the safest and most efficient manner instead of leaving it to squadrons to carry out. When it is remembered that only 20 watts were being used by the transmitters, the greatest care had to be taken to avoid leakage by conduction and induction.

The transmitter and its battery were mounted on a tray which slid into a little cupboard in the fuselage.

In the early days, officers were taught to adjust and tune in the air, but experience showed that it was much safer and better to leave all that sort of thing to be done by the trained mechanics on the ground. The whole set was entirely overhauled after each flight, and they were responsible that everything was in perfect order before the machine left the ground.

These precautions practically insured the apparatus against breakdown, and it was only natural that the pilots came to have implicit trust in the reliability of their wireless.

The confidence of the pilots was a very important factor in the success of wireless, and to gain this one had had to participate in and appreciate as far as possible some of their difficulties and dangers.

This knowledge profoundly modifies the design of any apparatus that can be used in war successfully.

The Need for Simplicity.

To call upon a pilot to make even one adjustment may easily add 20 per cent. to the failures, and it was found by experience to be far better to sacrifice a certain amount of electrical efficiency and to provide apparatus which was able to do the work required and could be used by as many thousands of pilots as operations in all theatres of war might demand.

I feel called upon to make these remarks in defence of the No. 1 transmitter and in answer to the criticism of wireless engineers who had no opportunity of appreciating the conditions under which this work was carried out on the Western Front.

Early in 1916 Major Prince brought out a valve transmitter with telephony attachment of his own design. This was successfully demonstrated to Lord Kitchener, who was visiting France at the time. He was able to hear every word from a machine flying 40 miles away, and was much impressed.

I mentioned at the beginning of my remarks the absence of data from which we suffered, and an interesting fact developed in ascertaining the correct length of aerial for a definite length of wave.

Whilst this relation is well known for different kinds of aerials on the ground, I found the ratio in the air differed with each type of machine and presumably depended upon their different electrical capacities.

The ratio of one foot of aerial for a wave of one metre was true only within small limits, and after about 150 ft. of aerial for a 150 metre wave, different makes of machines required anything from 240 to 320 ft. for a 250 metre wave.

Amongst the requirements for the following year the need for a 100-mile transmitter was felt. Major Whiddington's spark transmitter, having proved its capability, was adapted provisionally until valves were sufficiently developed for this work, which occurred the following year.

Although the continual increase of the R.F.C. showed that the general principles already in use in wireless were sound, it was clear that an extension of the range of notes as distinct from wave lengths was desirable.

Accordingly, the wireless repair section set to work and produced a simple but very effective little device which was easy to fit to the trembler of the primary of the transmitter.

By a simple adjustment the note could be varied over a range of about six whole tones, thus giving a very great variety.

Our little workshop made them, and a flight in every squadron on the whole front was fitted in a month, and proved a great success.

I was appointed Officer in charge of Wireless at R.F.C. Headquarters in March, 1916.

Receiving in the Air.

It became necessary to turn our attention seriously to the reception of signals in aeroplanes. The instruments hitherto sent out for trial had not proved satisfactory, and a G.H.Q. Intelligence report that the enemy was using such a device put our little wireless section on its mettle. With the assistance of Lieut.-Col. Blandy, of Wireless H.Q. Signals, three days later we were able to give a demonstration of the reception of signals from a standard Army station, by an aeroplane at 20 miles' range.

We used three valves associated with fixed coupled circuits designed for one wave length only. This made for extreme simplicity as the apparatus only required to be switched on to function without further adjustment.

The whole front was by now standardised and organised on the lines which had been found so successful in the 1st Wing, and preparations for the Somme offensive were put in hand.

A school was started at St. Omer to train operators in the latest methods and codes. This included an important development of arrangements for a moving battle and methods for putting the guns on to fleeting targets.

A part of H.Q. moved to an advanced position and an enormous concentration of all forces took place. As the time for the attack approached, the role of air co-operation became more and more important in neutralising the enemy's artillery fire and hampering his movements generally, and in ensuring the barbed wire in front of his trenches was effectively cut. As the Somme operations took place during July, August, and September when the days were very long, the strain on the operators of listening in from dawn to dusk was immense, especially as there were over 600 ground stations in the battle area with only one operator at each.

The arrangements for putting the guns on to fleeting targets worked splendidly, and over 100 signals an hour of this kind were dealt with at Group Headquarters. Co-operation with the infantry also proved successful, and similar arrangements had been made to work with the cavalry had they got through.

Good Work Recognised.

The work of the officers was not less strenuous than that of the operators, but we felt amply rewarded when at the close of operations the following special order of the day was published.

"The General Officer Commanding wishes to express his great appreciation of the work done by the wireless personnel of the R.F.C. during the present operations. They have very responsible duties, and the way they have carried them out, in spite of long hours under fire, has contributed in no small measure to the success achieved by our artillery.

"Wireless Officers are requested to bring this Order to the notice of all operators."

At the end of 1916 I was appointed to the Air Ministry, and when I left France the total wireless personnel numbered 200 officers and 2,000 operators and mechanics, or more than the total personnel of the R.F.C. at the outbreak of war.

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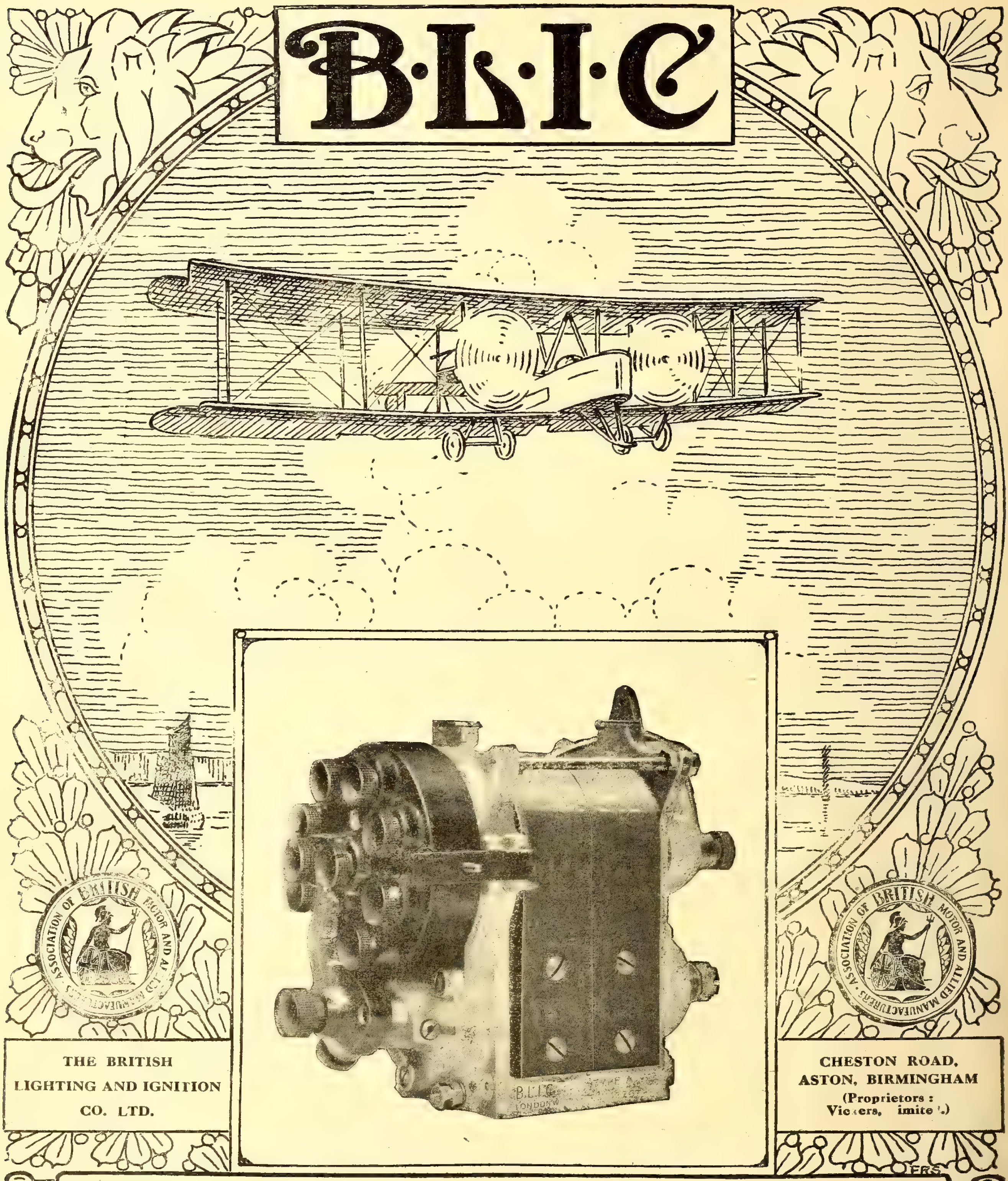
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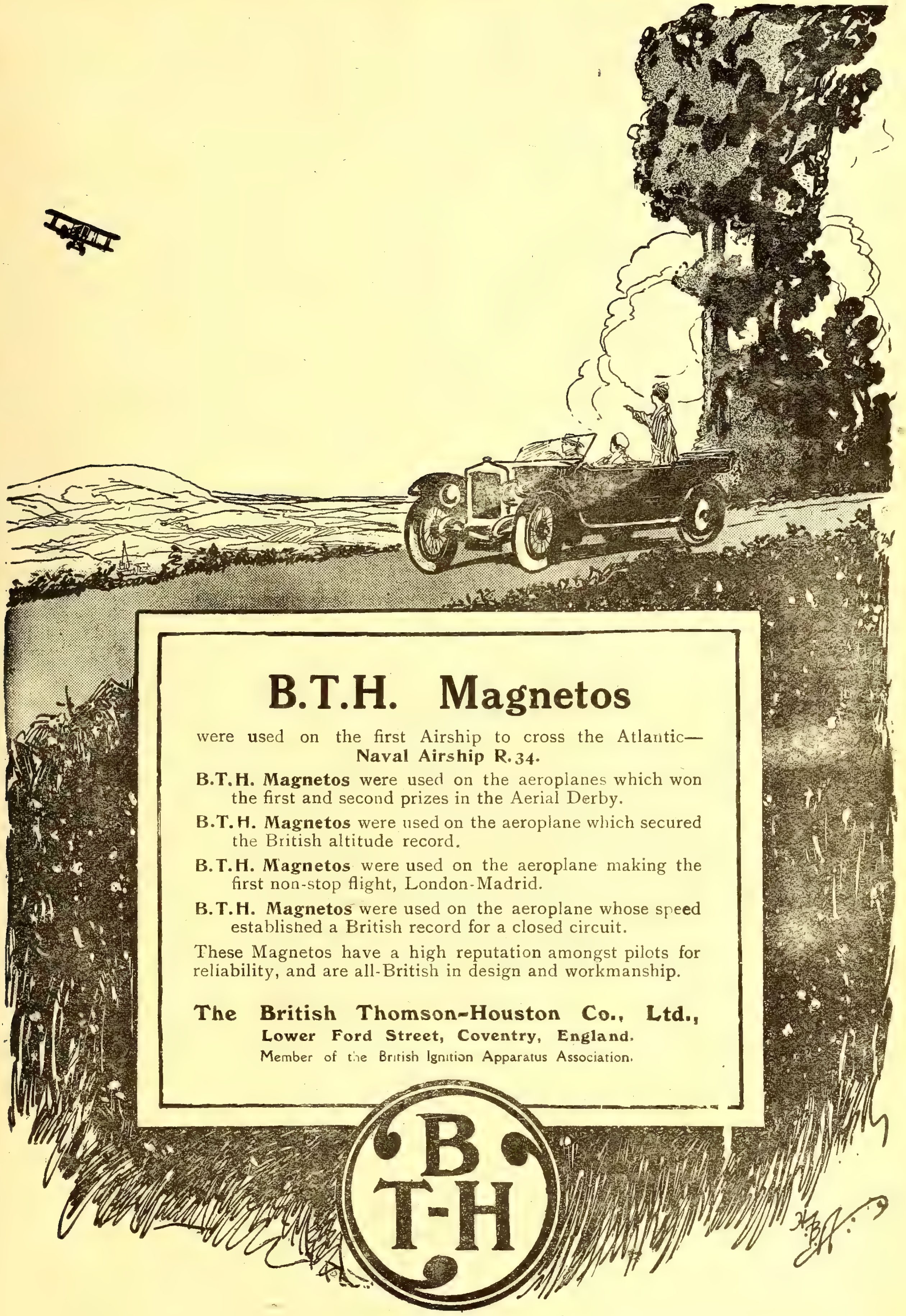

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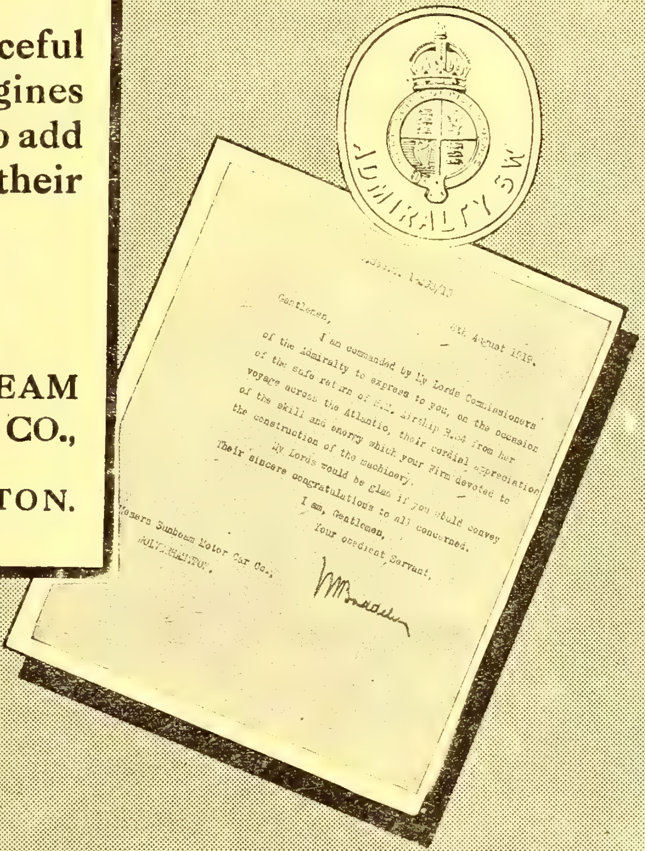

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Gentlemen,

[illegible] August 1919.

I am commanded by My Lords Commissioners of the Admiralty to express to you, on the occasion of the safe return of H.M. Airship R.34 from her voyage across the Atlantic, their cordial appreciation of the skill and energy which your Firm devoted to the construction of the machinery.

My Lords would be glad if you would convey their sincere congratulations to all concerned.

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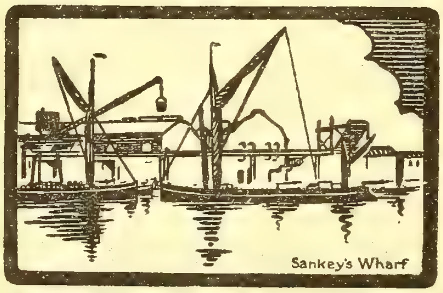

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The serious work of organisation, of training, supply, research, and policy for all theatres of war was undertaken, also Home Defence, which became a necessity at this time.

It was probably in training that the greatest effect was made, and by adopting a policy of intensive culture by instructors drawn from the Front, the personnel were sent to France ready to take up their work on landing, which led to the closing of the School of Instruction at St. Omer.

Specialisation was carried to its extreme and with standardised apparatus and methods the system proved itself fully justified, and an ever-increasing stream of officers and men poured out to France, all highly trained in their own particular branch of wireless, whilst periodical visits were paid to the Front by us all in order to keep thoroughly up to date.

Extremely good wireless work was done at the battles of Arras and Vimy Ridge.

In the latter operation the following figures are eloquent, and were officially reported as the work of the 2nd Wing working with 38 H.A. groups, 55 Divisional Artillery, and 187 Heavy and Siege Battery Stations:

256 Hostile batteries destroyed.
86 Gun pits destroyed and 240 hit.
103 Explosions caused.
229 Destructive trench shoots.
117 Successful registration shoots.
2843 Fleeting target calls received at Battery Station.
406 Artillery observation flights.
Wireless failures nil, working with
30 Machines simultaneously on a 7-mile front.

During 1917 continuous wave transmission and wireless telephony were developed to the point of standardisation and use at the Front. In the latter case intercommunication between the fighting machines in the air was leading to important results and a range of five to ten miles was achieved.

The visual reception of signals in aeroplanes utilising valves to work a relay was developed and demonstrated successfully in France by Capt. Murphy, but was not employed.

By the end of this year (1917) the following apparatus had been evolved for and by the R.F.C. and was in use in the field.

Short and medium range air to ground spark transmitter.
Aircraft receiver for Morse and telephony.
Aircraft and ground telephony and C.W. transmitter.
Ground spark, Tonic train, and C.W. transmitters and C.W. and spark receivers, and Directional receiving for aircraft was in an advanced experimental stage.

The total wireless personnel now numbered 300 officers and 3,760 operators and mechanics.

The figures for the month of September, 1918, which represented the full development of our last great offensive which resulted in the final defeat of the enemy.

2,120 Shoots to destruction.
2,575 Flash patrols.
74,201 Fleeting target calls from the patrol machines.
11 Wireless failures.

At the signing of the Armistice complete ground wireless communications had been established between all units. Between 400 and 500 machines were fitted with wireless, and the guns were provided with nearly 2,000 wireless stations.

The whole personnel amounted to 520 officers and 6,200 other ranks.

It must, I think, be judged satisfactory that we were able to beat the enemy so thoroughly in a science in which at the outbreak of war they excelled so conspicuously.

Of the truth of this assertion he has given us ample corroboration in a document captured by us, and of which I will give a translation in conclusion.

Translation of a German Document.

XI. Army Corps Staff.
South of the Somme.
Ic/Wing Commander No. 12358/1466. Corps H.Q.
Relating to Salvage of Aeroplanes. 1-6-18.

"1. The salvage of aeroplanes must be pursued with still greater vigour. Valuable technical improvements, which have apparently been extensively applied by the enemy, have been lost to us hitherto. Labour and money spent at home on trials might have been saved by earlier information.

"2. The enemy has secured a distinct advantage in his successful use in aeroplanes of continuous wave wireless apparatus which possesses great superiority over the spark apparatus in use with us.

"It is of the greatest importance to us to salve further enemy wireless apparatus of this description. In this way millions of money will be saved, as we have not so far been successful in constructing a continuous wave wireless apparatus for aeroplanes, which can work without certain disadvantages.

"It is, therefore, the duty of all authorities to ensure the most indefatigable and careful salvage of wireless apparatus of enemy aeroplanes. Every particle is to be salved and collected, if it is in any way possible. The ordinary man cannot recognise what value and meaning a single piece can have to an expert. As, by unskilled removal, this very delicate apparatus can easily be destroyed, the work of salvage is to be entrusted to Flying Corps or wireless personnel.

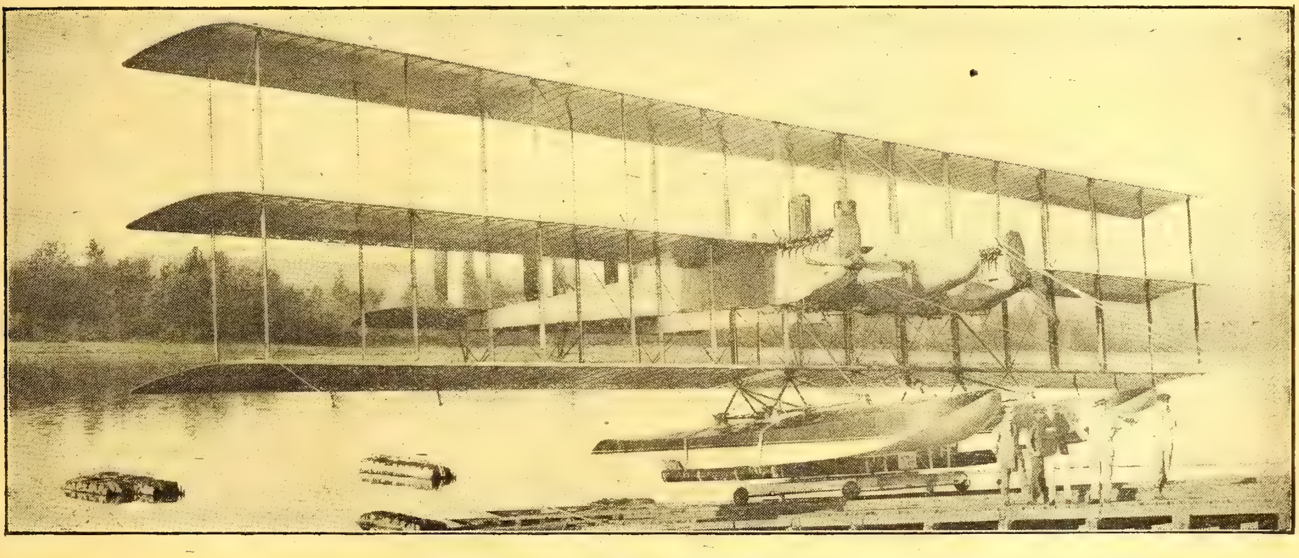
"Having regard to the great importance of the apparatus for our own wireless telegraphy, the recovery and salvage premiums are correspondingly high. They belong to the formation which, by informing the Flying Corps, permits of assistance and appropriate measures being taken for salving the object undamaged; therefore, such premiums will not belong to the Flying Corps unit."

This brief history of the wireless work done by the Military wing of the Royal Air Force is a recital of small details, each so insignificant that one would hesitate to mention them individually. Remembering the conditions obtaining in war, the difficulties of supply and training, and the enormous importance of time, the general results achieved must be accepted as justification for the policy adopted.

A NOVEL USE FOR SCRAPPED PARTS.

At a recent entertainment given by "The Whippets," the pierrot troupe of the Air Navigation and Enginnering Co. (Blériot's), at Addlestone, an entirely original "jazz" band was formed of members of the troupe playing upon "instruments" consisting of "scrapped" sheets of metal, motor-car parts, and aeroplane parts, and, according to reports, some weird and wonderful "music" was thus produced.

One would suggest that a rotary engine cowl would make a perfectly good gong, and doubtless the centre section of a wing having the fabric on it very taut, and tightly doped, would be useful as a drum, which could be beaten with the "joystick" or a centre section interplane strut with one end padded. In these days of economy, the concert parties of aircraft firms would do well to take the hint. But imagine the feelings of a pilot in the audience on seeing the component parts of his favourite 'bus thus used!—J. F. S.



A three-engine Caproni Sea-Triplane.

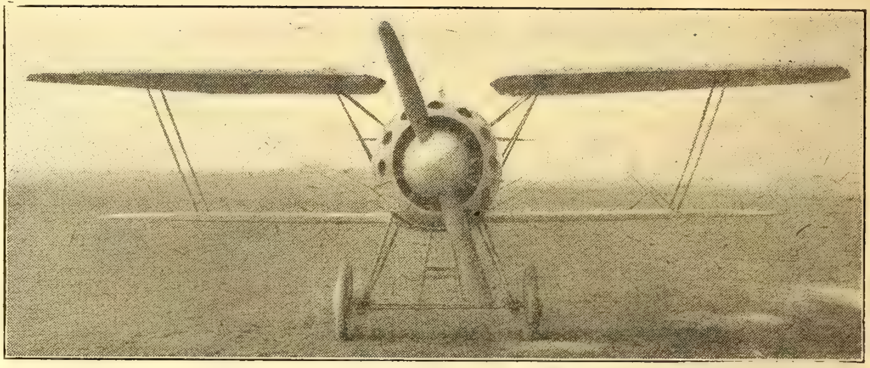
RECENT GERMAN WAR MACHINES.

III.—Kondor Flugzeugwerke.

The Kondor Works at Gelsenkirchen-Rotthausen were founded by the pilot Joseph Suvelack before the war, and produced a number of experimental monoplanes and biplanes.

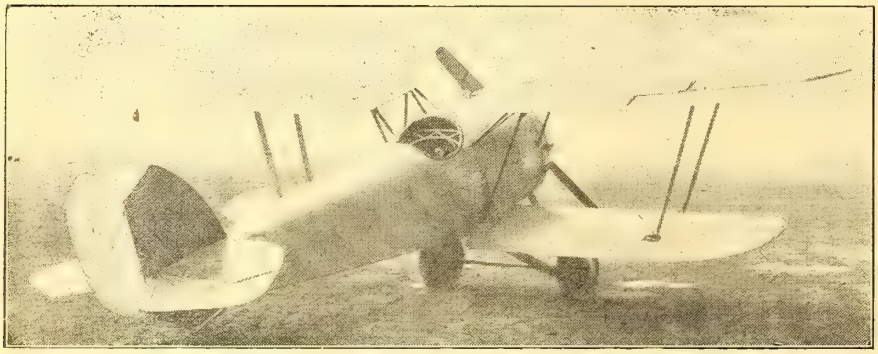
Suvelack himself was killed in aerial combat with a British opponent, but the concern has carried on in spite of the founder's death.

During the war the firm acquired the services of Herr Westphael as chief designer, under whose guidance they turned out a tractor biplane with a Mercédès engine which established a German altitude record with four passengers at Johannisthal.



Front view of the Kondor D.VI. Single Seat Fighter (200 h.p. Goebel Engine).

More recently the Kondor works have turned out the machines illustrated here. The first, illustrated in the two upper photographs, the D.VI., is a single-seat fighter fitted with the 200 m.p. Goebel rotary engine—a German effort of very "Le Rhone"-ish aspect.



Threequarter rear view of the Kondor D.VI. Biplane.

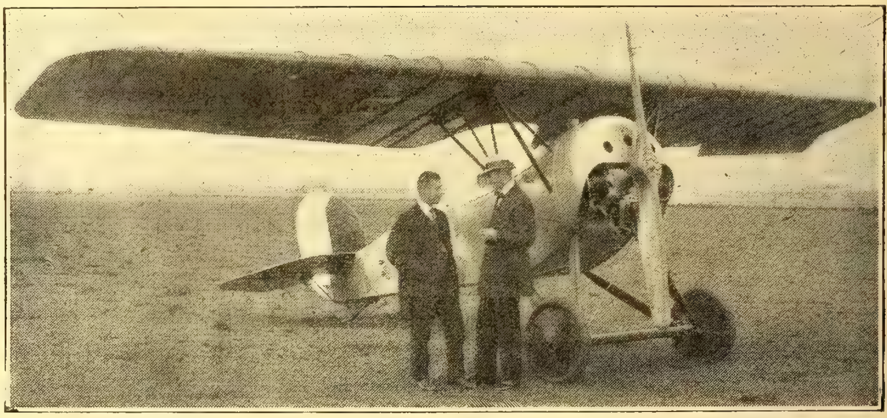
In this machine it would appear that the designer's wish to provide the pilot with the very best possible view has somewhat outrun his constructional discretion. At any rate, the angle of the struts between the fuselage and the upper planes does not inspire one with any great confidence as to their capacity to resist the compression loads usually carried by the centre section spars.

Apart from this extraordinary feature, the machine looks to be a very simple and straightforward example of its class, conforming in all respects to German standard practice.

The arrangement of cowling is curious; the row of air ducts fitted in the front are presumably intended to supply air to the cylinder heads for cooling purposes—which might as well have been affected by suitably shaping and proportioning the spinner attached to the air screw, and at a lower cost in head resistance.

The next two pictures represent machines which might as well have been built by any one of several of the German manufacturers.

They are of the Fokker inspired cantilever - wing parasol - monoplane type, which pictorial evidence suggests have been built to one design—with minor modifications—by most of the German constructors.

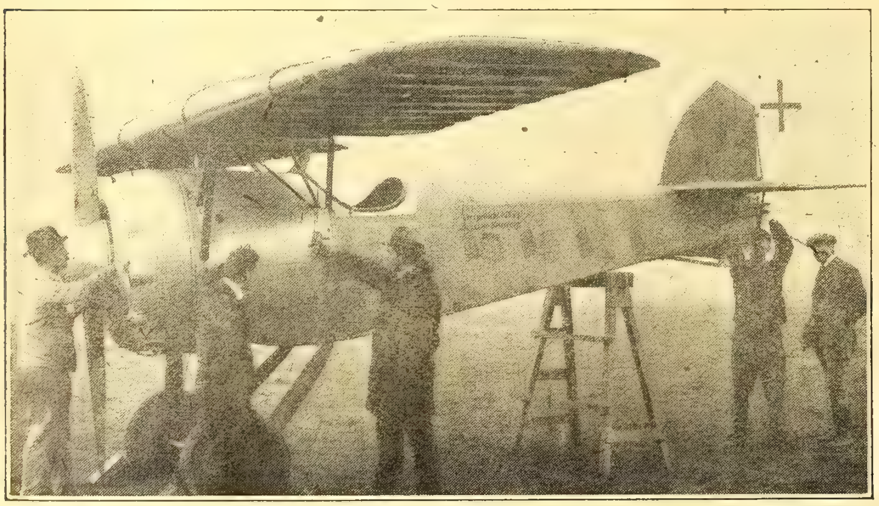


The Kondor Type E.III. Parasol Monoplane (Oberursel engine).

The upper picture—the Kondor E.III., is fitted with the Oberursel rotary of 140 h.p. and differs very little indeed from the original "Fokker" parasol.

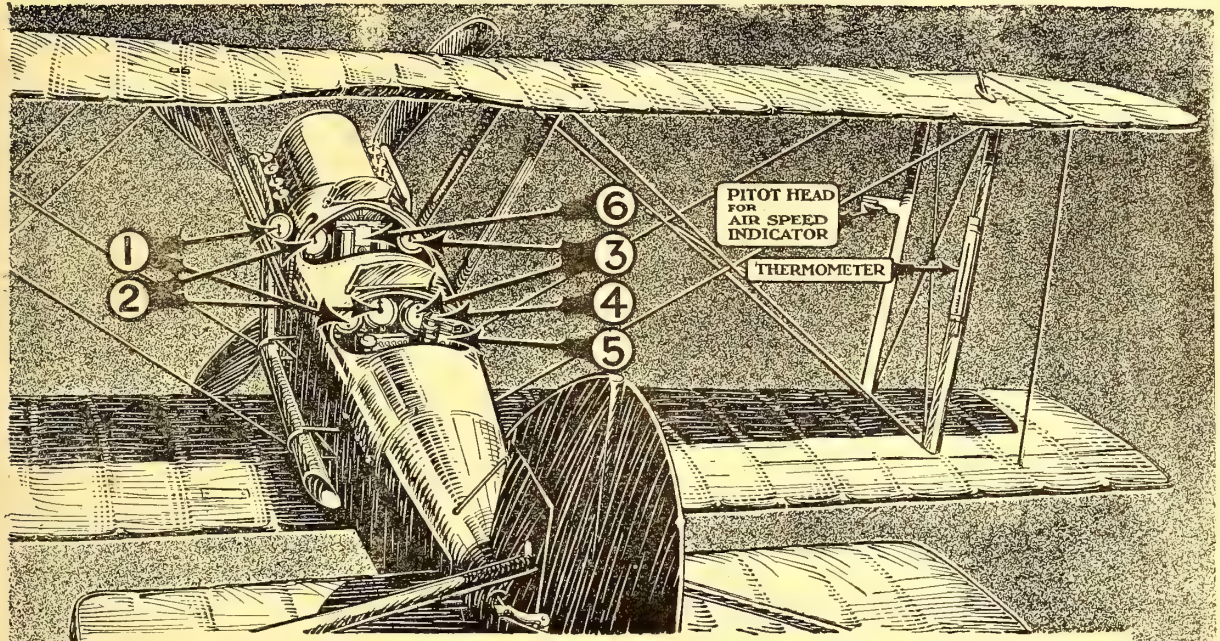
It is obviously fitted with metal wings of the same general structure as its prototype, and its general arrangement is exactly the same. The machine is said to have a speed of 195 k.m.p.h. (121 m.p.h.), and a climb to 5,000 metres (16,400 ft.) in 16 mins.

The type E.IIIa. below is a modification, fitted with the 200 h.p. Goebel engine.



The Kondor Type E.IIIa. Parasol Monoplane (200 h.p. Goebel Engine).

The curious cowling used with the same engine on the D.VI biplane is here again employed, the gap between the wing and the top of the fuselage appears to have been reduced, but in all other respects there seems little difference. With the more powerful engine the speed is said to have increased slightly—to 200 k.p.h. (124 m.p.h.), and the climb to 5,000 metres occupied only 11 mins.


PITOT HEAD FOR AIR SPEED INDICATOR
THERMOMETER
1
2
6
3
4
5

AIRCRAFT IN THE MAKING—No. 4

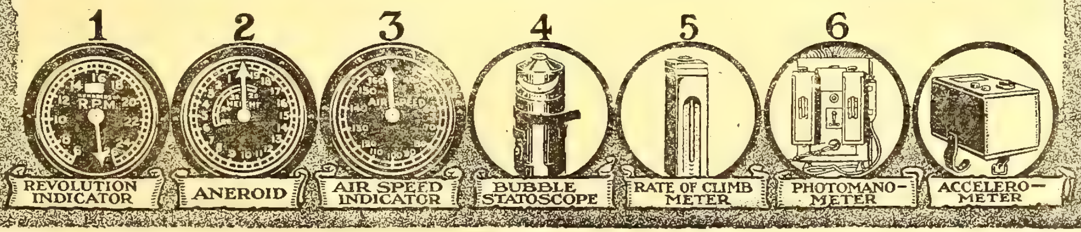
Being one of a series of announcements which describe and illustrate interesting Scientific Devices, Instruments and Machinery utilised in the designing and making of B. & P. Aircraft.

FULL SCALE TESTS

In order that calculations based on model results may be verified and "scale-effect" experience co-ordinated, careful tests are made with complete aeroplanes. The illustration shows our P 9 model fitted up for full scale experiments. Numerous special instruments are utilised to indicate and to record the desired information. For the majority of these instruments, some of which are illustrated, we are indebted to the work of the Royal Aircraft Establishment and the Martlesham Heath Testing Station.

Boulton & Paul Ltd.
NORWICH

Write for particulars of P9, the real Commercial Aeroplane.



NAVIGATION INSTRUMENTS.

The following memorandum has been issued by the Controller of Information, Dept. of Civil Aviation :—

Technical Memo. No. 5, Nov., 1919 :—From time to time various aviation firms have made inquiries at the Air Ministry as to the supply, for civil aviation purposes, of navigation instruments of the types which have been used by the Royal Air Force.

The following brief descriptions of some of the apparatus, together with the names of firms who have supplied the apparatus to the Air Ministry, are given so that intending users can apply direct to the manufacturers.—(Signed) E. D. Swinton, Controller of Information.

Aero compasses of various types according to the designs of Capt. Creagh-Osborne, R.N., and Messrs. Hughes and Son, Ltd., can be supplied by Messrs. Hughes and Son, 59, Fenchurch Street, London, E.C.3, who now hold the sole patent rights. The types include airship compasses, seaplane compasses, and compasses for long-distance machines.

The Bigsworth Chart Board.—This consists of a board with a celluloid cover under which a chart can be placed. A double parallel-link arm is pivoted to a clamp which can be adjusted up and down the left-hand side of the board. The free-end of the arm carries a clamping device to which is pivoted a rectangular celluloid protractor and a bearing pointer working over a celluloid bearing disc fixed at the centre of the protractor. Both the pointer and the protractor can be clamped in any position in the clamping device. The latter can, by reason of the construction of the arm, be moved over the board by parallel movement to any position without rotation. A 17-in. board has been manufactured by Messrs. J. A. Sinclair and Co., Ltd., 54, Haymarket, S.W., and a 14-in. board by Messrs. Bleriot, Ltd., 57-9, Long Acre, W., and the General Instrument and Engineering Co., Adam Street, New Kent Road, S.E.

Campbell-Harrison Course and Distance Calculator, combined with the Appleyard Time and Distance Dials. This instrument was designed for solving problems involving the speed of the wind and the air-speed and ground-speed of the aircraft. It enables, for example, the steering-course to be found when the wind and the course to be made good are known. It consists of two celluloid discs of about 8 inches in diameter pivoted together and provided with two arms pivoted at their centre. The arms are marked with scales of speeds and have index slides adjustable along them. The upper disc is transparent and ruled into squares by parallel lines at the same intervals as the markings of the speed scales on the arms. The lower disc is marked with compass bearings and degrees, and the edges are marked with logarithm scales for finding the distance covered in a given time or the time required to cover a given distance. The Course and Distance Calculator has been manufactured by the following firms :—

Metal, 9-in.—The Endacott Scientific Instrument Co., Verulam Street, E.C.1, and The General Instrument and Engineering Co., Adam Street, New Kent Road, S.E.

Metal, 7-in.—Messrs. Elliott Bros., 1, Central Buildings, Westminster, S.W.1.

Celluloid, 7-in.—Messrs. Hughes Label Co., Ltd., Titchfield Works, Enfield, Middlesex, and The Celluloid Printers, Ltd., 17, Hanway Street, Oxford Street, W.

Six-inch Drift Bearing Plate.—This consists of a circular frame which can be fixed horizontally outside the fuselage. The bearing plate, marked with compass bearings and in degrees, is a ring which can be rotated in the frame. Another ring is arranged externally on the frame and can also be rotated on the frame. The latter ring carries two celluloid strips close together, arranged so that the joint between them is diametral to the rings, and a sight bar hinged at one end of the strips. When the inner ring is set according to the steering course and the outer ring turned so that objects on the ground appear to move parallel to the strips, the drift can be read by means of the graduations and index provided. With the sight bar in the vertical position, the instrument can be used for taking bearings and measuring the angle subtended by two distant objects. The sight bar has an altitude scale by means of which a back sight can be adjusted on it so that the line through it and a foresight fixed on the front of the outer ring meets the ground a known distance, say half a mile, in front of the aircraft. The instrument can thus be used with a stop watch for finding the ground speed. The instrument has been manufactured by Messrs. Heath and Co., Ltd., New Eltham, S.E., and Messrs. Casella and Co., 49-50, Parliament Street, S.W.1.

Appleyard Air-speed Computer for correcting indicated air-speed for altitude.—This consists of a circular disc marked at the edge with a logarithmic scale of air-speeds and rotatable on a card marked with a scale of heights. The latter scale has a red arrow. The true air-speed is read against this arrow when the indicated air-speed on the disc is put against the height on the card. The instrument has been manufactured by The London Name Plate Co., 127, Elthorne Road, Upper Holloway, N.19.

AIRCRAFT FINANCE.

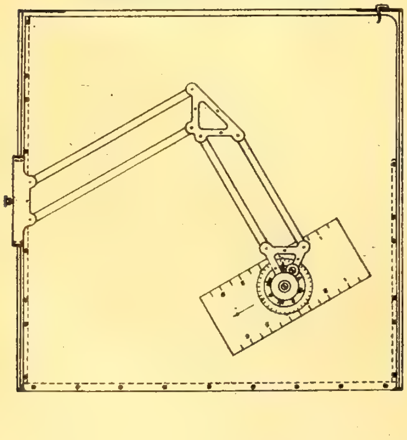
Sidelights on the efforts of one Robert Taylor some time ago to become a power in the Aircraft Industry were disclosed recently when two bankrupts—William Fredk. King, of 3, Vauxhall Bridge Road, S.E., and Edward Charles Gillott, of 38a, Bessborough Street, Pimlico, S.W.—applied for their discharge from bankruptcy.

Mr. King was a Director of William King and Son, Ltd., builders and contractors, and also of four aircraft companies, three of which went into liquidation, and to all of which he was introduced by Robert Taylor. He attributed his failure to liability as surety for money lent to Taylor and to one of the aircraft companies. Taylor had stated that he could procure contracts from the Air Board for aeroplane parts and could finance William King and Son, Ltd., to which the bankrupt and his brother had sold their business, and of which Taylor was appointed Managing Director. On behalf of Mr. King, who is 66 years of age, it was advanced that his was a very old business, and that he had no liabilities except those incurred through Taylor. He was granted his discharge on consenting to judgment for £100.

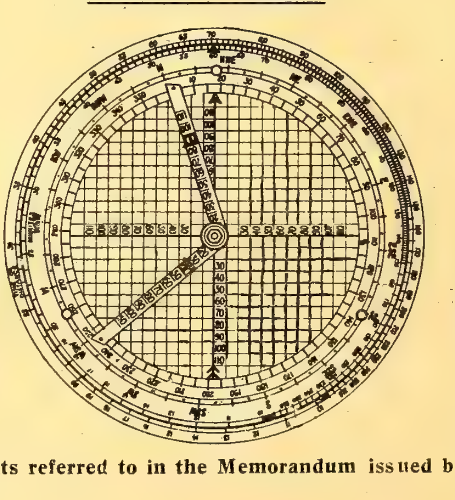
In the case of Mr. Gillott, he was the Manager of the Draycott Engineering Co., Ltd., who made aeroplane parts. In March, 1918, he bought the plant of the Draycott Company, and in June he retired from partnership in that concern. His bankruptcy was due to a promissory note which he had signed in September or October, 1918, together with Mr. Nathan, the Secretary of the Draycott Company and Mr. King. The cheque received from the lenders of the money was handed to Taylor, who started the company and was its Chairman. He understood that the money was to be used for the benefit of the company; but, as a matter of fact, the company received none. Mr. Gillott also received his discharge on consenting to judgment for £50.

It will be recalled that Taylor was also concerned in the Cowper-Coles aircraft affair.

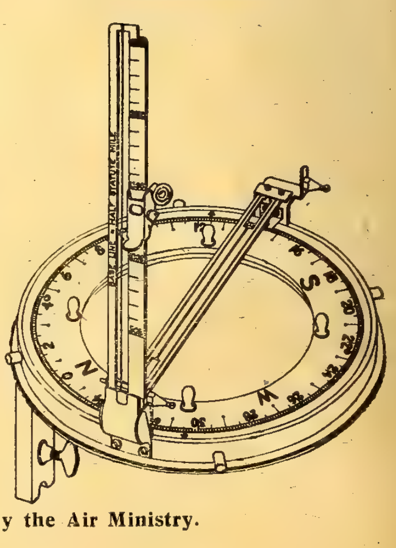
BIGSWORTH CHART BOARD.



CAMPBELL-HARRISON COURSE AND DISTANCE CALCULATOR.



6" BEARING PLATE.



Some of the Instruments referred to in the Memorandum issued by the Air Ministry.

Woodside
ENGINEERING
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BRIGHT BOLTS AND NUTS,
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Specialty RAFWIRES & TIERODS for Aircraft.

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THE DEATH OF MR. H. E. STONER.

One regrets to announce that Mr. H. E. Stoner, managing director of the Vacuum Oil Company, Limited, died on Nov. 18th at his residence, Ashley Gate, Walton-on-Thames, of heart failure after a long illness. Mr. Stoner was in his 55th year. A private service took place at the Woking Crematorium on Friday, Nov. 21st, at 12 noon.

Mr. Stoner was connected with the Vacuum Oil Company, Ltd., for a number of years and was appointed managing director in 1912. He was president of the American Club, recently opened at 95, Piccadilly, a member of the Council of the American Luncheon Club, and a member of the committee of the American Society in London.

A VICKERS AMPHIBIAN.

It is stated that the Vickers "Viking," an amphibious machine of the flying-boat type but fitted with a retractable chassis, has been successfully tested on land.

Trials on the water appear not to have been made so far.

The machine is a single-engined affair of quite small size and is fitted with accommodation for pilot and mechanic and four passengers, or, alternatively to the latter item, 800 lb. of freight.

Fuel for five hours, roughly 500 miles, is carried.

ANOTHER "DUCO" SPECIALITY.

Owners of cars and aeroplanes alike have on occasion to wash their vehicles, or, at any rate, have to get them washed. Brown Brothers, Ltd., the famous factors of Great Eastern Street, are well known as always producing the particular thing that is wanted at the particular time it is wanted. In this particular instance, with sponges of the animal species at their present prohibitive prices, Brown Brothers have wisely put on the market the "Duco" rubber sponge, expressly designed for the washing of vehicles.

It is claimed for these sponges that they will outlive two or three natural sponges and will dry off the moisture as well, if not better, than an ordinary sponge. Therefore, if they cost twice as much as a natural sponge, they will be cheaper in the end. As a matter of fact, they actually cost much about the same as a natural sponge of the same size, and are therefore very much better.

Another point in their favour is that the "Duco" sponge is British made. One commends it to the attention of all those to whom it can be useful.

PARACHUTES AND INSURANCE.

Singularly convincing testimony to the estimation in which the "Guardian Angel" parachute is held by those whose business it is to study and calculate risks is afforded by an insurance policy issued by Wheels and Wings Insurance Company, of 33, King William Street, E.C., in favour of Miss Doris Marshall, while flying in an aeroplane with a view to descending from such aeroplane in the said parachute for one descent only. In this instance the amount insured was £200 in case of death. The premium charged was £1.

This shows that such was the confidence in the "Guardian Angel" parachute that they charge a premium of only ½ per cent. for any persons making a drop in one of these parachutes. In fact the premium is really less than that, because it covers not only the parachute drop, but the aeroplane flight preceding the drop.

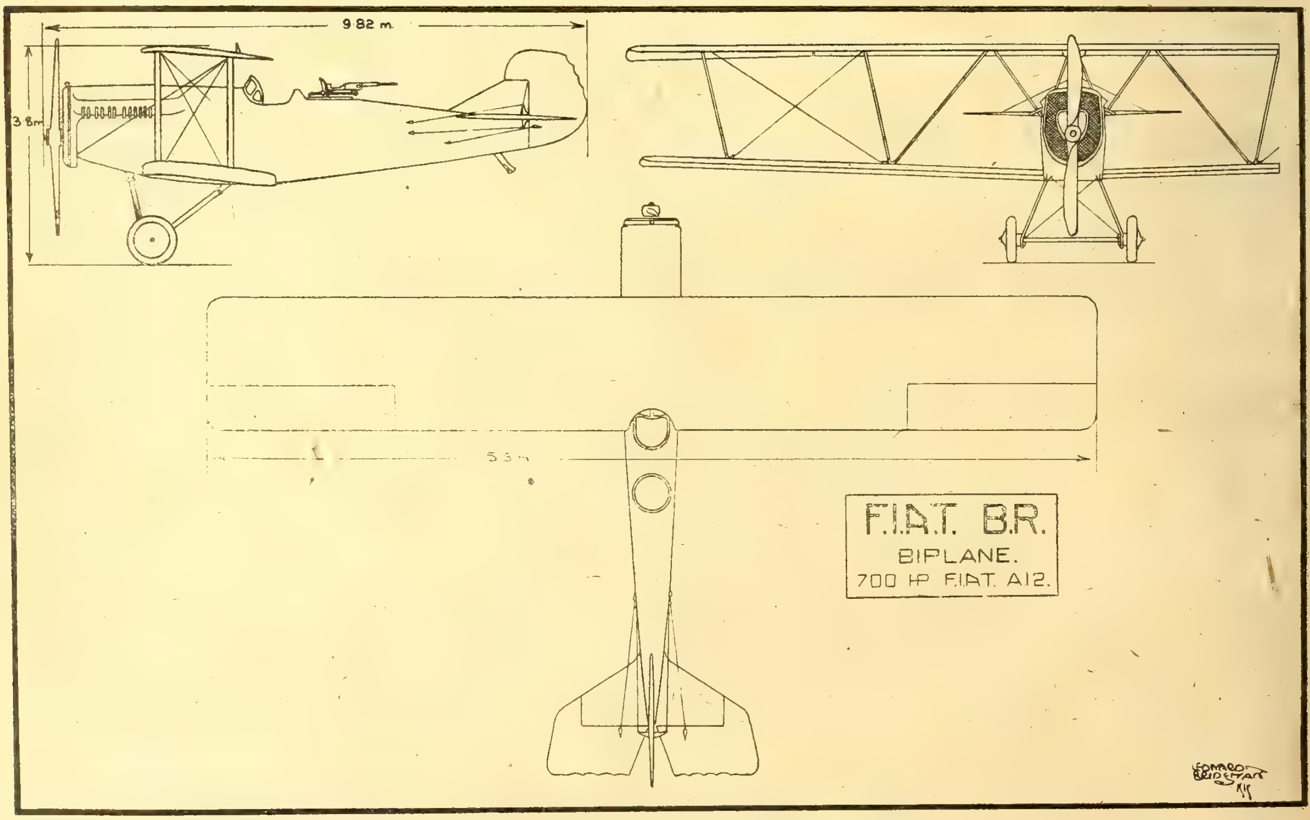
It may be recollected that the only accident which has occurred to the two most famous users of "Guardian Angel" parachutes, namely, Miss Boynton and Major Ord Lees, occurred to them in an aeroplane while starting on a flight from which they intended to descend by parachute. Thus it would appear that quite a large proportion of the premium actually covers the aeroplane flight.

It would be interesting to know how many drops have in fact been made by parachute up to the present date without accident and how many accidents have occurred. So far as the "Guardian Angel" parachute is concerned, one can only recollect one accident and in that case the accident did not occur through any fault in the parachute, but through the giving way of the attachment by which the parachute case was held to the aeroplane.

NEW COMPANIES.

NORTHERN AIRCRAFT TRANSPORT AND TRAVEL CO., LTD.—Private company. Registered Nov. 15th. Capital £5,000 in £1 shares. Objects as indicated by the title. The subscribers (each with one share) are :—C. A. Crichton, 89, Bright Street, Roker, Sunderland, Lt., R.A.F.; J. Emerson, 34, Bright Street, Sunderland, optician. The permanent directors are C. A. Crichton, Flight Lt. R. Thornton, F. Woods, F. Fowler, J. Emerson, R. W. Graham, A. Sember, and W. Thomas. Registered office : Empire Motor Garage, The Green, Sunderland.

ESSEX AIRCRAFT AND MOTORS, LTD.—Private company. Registered Nov. 14th. Capital £5,000 in £1 shares. To carry on the business of an aviation company, to manufacture and deal in aeroplanes, hydroplanes, automobiles, motor cars, and cycles etc. The subscribers (each with one ordinary share) are A. Thomson, 90, North Road, Southend-on-Sea, aircraft pilot; C. W. Dougald, Normanhurst, 7, Cossington Road, Westcliff-on-Sea, accountant. The subscribers are to appoint the first directors. Qualification £500. Registered office : 90, North Road, Southend-on-Sea.



The drawing above shows clearly the principal dimension and the general arrangement of the Fiat 700-h.p. machine which attracted so much attention on the occasion of Lieut. Brack Papa's record-breaking flight from Rome to London.

BLOCTUBE CARBURETTORS
FOR AERO-ENGINES

RENÉ TAMPIER

CONSTRUCTING ENGINEER,
INVENTOR AND PATENTEE

CONTRACTOR TO H.M. AND ALLIED GOVERNMENTS.
PARIS. LYONS. TURIN.

BLOCTUBE CARBURETTORS COMPLETE.

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BLOCTUBE CONNECTIONS.

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Large Variety of Models.

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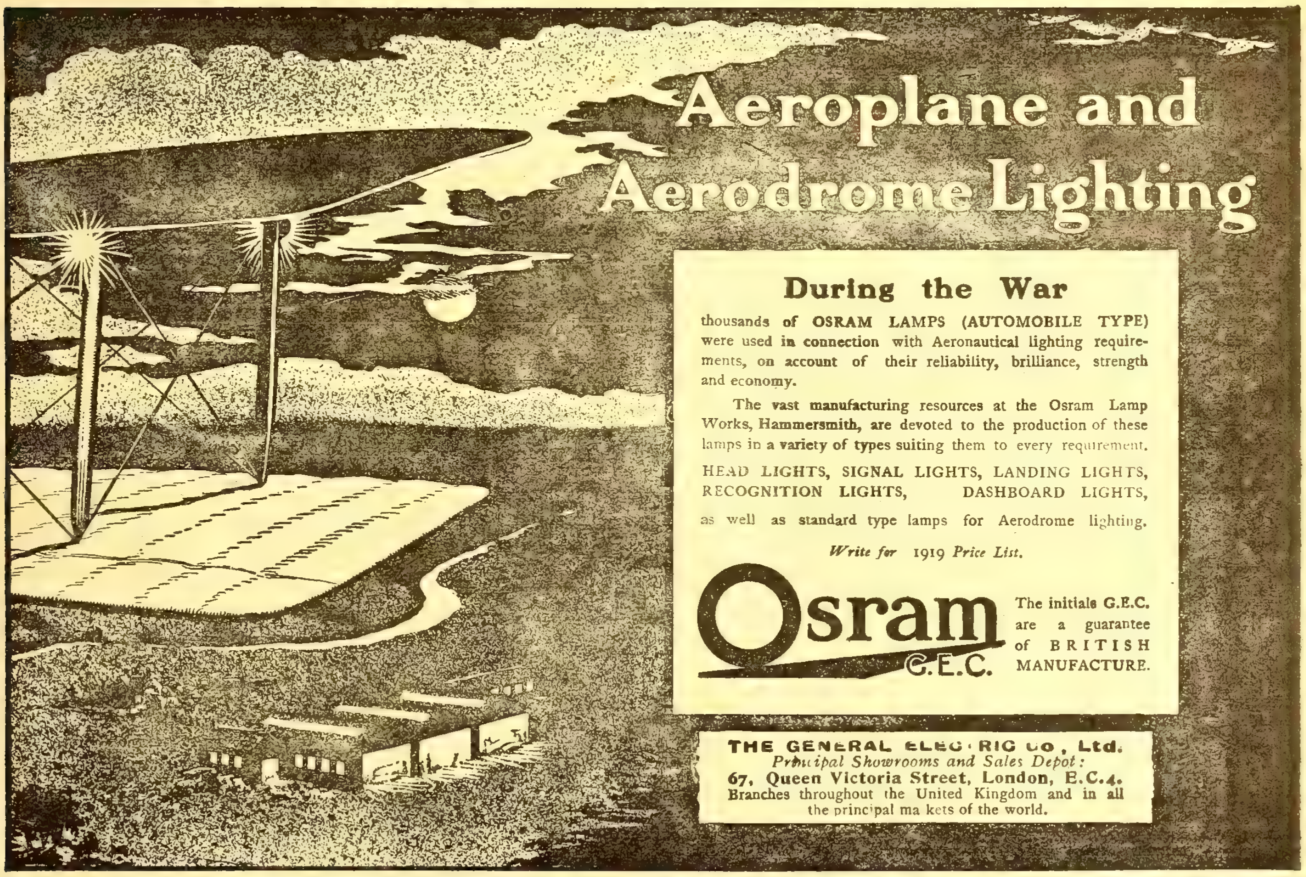

During the War

thousands of **OSRAM LAMPS (AUTOMOBILE TYPE)** were used **in connection** with Aeronautical lighting requirements, on **account** of their reliability, brilliance, strength and economy.

The **vast manufacturing** resources at the Osram Lamp Works, **Hammersmith, are** devoted to the production of these lamps in a **variety of types** suiting them to every requirement.

HEAD LIGHTS, SIGNAL LIGHTS, LANDING LIGHTS, RECOGNITION LIGHTS, DASHBOARD LIGHTS,
as well as standard type lamps for Aerodrome lighting.

Write for 1919 *Price List.*

Osram G.E.C.

The initials G.E.C. are a guarantee of BRITISH MANUFACTURE.

THE GENERAL ELECTRIC Co., Ltd.
Principal Showrooms and Sales Depot:
67, Queen Victoria Street, London, E.C.4.
Branches throughout the United Kingdom and in all the principal markets of the world.

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"SPEEDICUT" HIGH-SPEED TWIST DRILLS,
MILLING CUTTERS, REAMERS,
SLITTING SAWS.

THOS. FIRTH & SONS, LTD. SHEFFIELD.

GWYNNES
LIMITED.

CONTRACTORS TO H.M. GOVERNMENT

MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE

"CLERGET" PATENT AERO ENGINES

S·B·A·C
THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS

ENGINEERS, LONDON.

"'GWYNNE' LONDON." "HAMMERSMITH 1910."

COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

THE CONTINENTAL AIR SERVICES.

The Airco Service.

Fifteen weeks' flying have now been accomplished on the London-Paris route as follows :—

Flights scheduled, 227; flights successfully accomplished, 183; prevented by weather, 22; interrupted by weather, 17; interrupted by mechanical defect, 5; approximate milage, 50,290; average speed (m.p.h.), 103.

During the week ended Dec. 6th the bad weather interrupted many of the scheduled flights, but the passengers, mails and parcels proceeded on their journeys by train or car without undue delay.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass
Dec. 1st	DH4a.	Lt. Tebbit	Weather unfit for	totally flying	12 30 p.m.	Landed Lympne 2.25 p.m.	2
Dec. 2nd	DH16.	Lt. Armstrong	12 45 p.m.	Landed on ac (un	5miles s ount o fit for	hort of Paris t weather flying)	Mail
	DH16.	Capt. Baylis	2.20 p.m.	4.15 p m.			4
	DH9.	Lt. Robins			12 35 p.m.	3 40 p.m.	1 and Mail
Dec. 3rd	No machine left London or Paris on account of weather. Fog, rain, mist and strong wind in Channel.						
Dec. 4th	DH4a.	Lt. Shaw	12 45 p.m.	2.55 p.m.			1 and Mail
	DH9.	Lt. Lindley	12.55 p.m.	3 15 p.m			0
	DH16.	Capt. Baylis	Landed for	L'mpne petrol	12.30 p.m.	3 50 p.m.	2 and Mail
Dec. 5th	DH16.	Lt. Game	12.45 p.m.	Landed owingto	L'mpne weather		1 and Mail
	DH4a.	Lt. Armstrong	Strong and	squalls rain	12.35 p.m.	Landed Lympne 3 35 p.m.	Mail
Dec 6th	DH9.	Lt Bradley	12.50 p.m.	3 25 p.m.	Landed for mo	Lympne re Mail	Mail
	DH9	Lt. Shaw	Bad visibility		12.30 p.m	Landed Abbeville	1 and Mail
Dec. 7th	DH9.	L . Shaw				4.05 p m.	

The Handley Page Services.

London-Paris.—Between Sept. 2nd and Dec. 3rd a total of 579 passengers and 12,356 lb. of freight were carried, the total distance flown being 30,350 miles.

On Dec. 2nd three passengers and 614 lb. of goods were carried to Paris despite a gale of 67 m.p.h.

During the week ending Dec. 3rd exceptionally bad weather conditions, which included rain storms and fogs, made flying impossible on several days, but 10 passengers and 1,377 lb. of freight were carried.

Dec. 4th.—Seventeen passengers and 711 lb. of freight were carried. A machine carrying some seven passengers from Paris ran short of petrol on account of adverse weather. It was practically dark when the machine landed on the golf links of the Molesey Hurst Club.

The novelty of receiving Christmas presents delivered by aeroplane is resulting in a number of gifts being sent from Paris to London.

A London store is having new fashions in dress and fresh designs in jewellery delivered from Paris by air, in order to be amongst the first to display these goods in this country.

London-Brussels.—Between Sept. 25th and Dec. 3rd, 235 passengers and 24,815 lb. of freight were carried, 17,380 miles being covered.

Dec. 2nd.—Two machines flew together to Brussels, carrying 2,641 lb. of freight in a 67 m.p.h. gale.

During the week ended Dec. 3rd 7 passengers and 3,685 lb. of freight were carried, despite exceptionally bad weather conditions.

Dec. 4th.—Two machines flew together to Brussels.

A Booking Agency.

The Lepaerial Travel Bureau have issued a publication giving information of the regular air services from London to the Continent. One believes that it is the first time-table of these services to be issued.

During the week ended Nov. 29th, despite the weather, 16 tickets on the London-Paris and Brussels air services were sold.

Brooklands.

A correspondent writes :—

There is little activity on Brooklands now. Vickers continue to have their "Vimy" commercial machines tested there, and Sir John Alcock is a constant visitor to the works, where some experimental aircraft work is being carried on under the supervision of Mr. Pitman, who, until recently, was in charge of the woodwork department, and who also supervised the erection of the Transatlantic "Vimy" in Newfoundland.

A "Vimy" commercial machine is being specially fitted up for the Paris show.

Mr. Maxwell Muller, the general manager of the Weybridge works of Vickers Ltd., was recently approached by the Weybridge Urban District Council with regard to the possibility of Vickers Ltd. relinquishing the Holstein Hall, which was acquired by them during the war, and converted into a wing-erecting shop. This hall had been formerly in great demand for the holding of concerts, dances, etc., therein, and its acquisition by Vickers was a social loss to Weybridge.

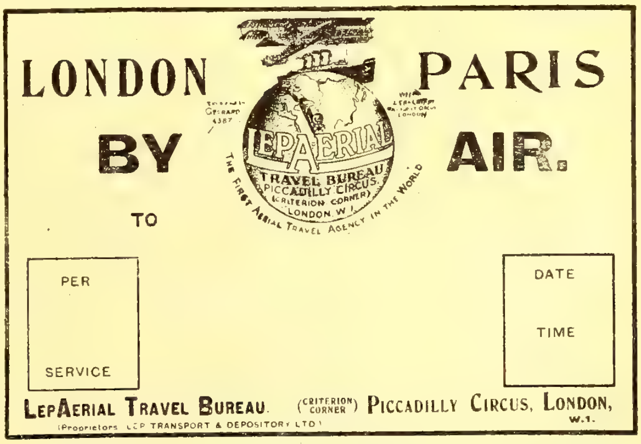
However, Mr. Muller replied that as a number of peace products were established there, which could not be transferred to the Byfleet Road main works owing to insufficient floor space, and a number of people would be thrown out of work as a result of the selling of the hall, Vickers Ltd. were not disposed to relinquish it; he also doubted whether a large enough sum would be paid by the purchasers to enable the firm to build new premises.

The works of Messrs. Gordon, Watney and Co., recently acquired by the Anglo-American Oil Co., will in future be controlled and known as the Weybridge Motor and Engineering Co., Ltd. Major Ralston is the general manager, Mr. J. W. Dews the works manager, and Mr. R. W. Eglon the secretary.

—J. F. S.

Hamble.

Capt. Hamersley, M.C., has been making experiments at Hamble in hovering flight. He took up the Avro "Baby" in a wind of about 40 m.p.h., faced the wind, throttled down, and succeeded in remaining in the same spot over the aerodrome for about five minutes. During the E.L.T.A. at Amsterdam he gave a similar exhibition, and allowed the "Baby" to be blown backwards, and landed on the aerodrome without turning.



LONDON PARIS

BY AIR.

TO

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SERVICE

DATE

TIME

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(Proprietors LEP TRANSPORT & DEPOSITORY LTD.)

A LUGGAGE LABEL.—With travellers by air, and Americans especially, these stickers are very popular.

LONDON.

HOUNSLOW.—On Dec. 4th, an Airco D.H.9 biplane piloted by Lt. Powell left the aerodrome at 12.10 p m. for Brussels, with one passenger (the Secretary of the Aero Club of America) and a pilot to be dropped at Lympne. After calling at Lympne the machine proceeded to Wimereux to deliver spare parts required for an Airco machine which had a forced landing there. Wimereux was reached at 1.30 p.m., and the journey to Brussels was completed 35 minutes later.

An Army officer chartered an Avro machine at the Lepaerial Travel Bureau to fly from Hounslow to Farnborough on Nov. 24th with a special supply of ammunition urgently required. On his arrival at the aerodrome the machine was awaiting him.

Before the Carpentier-Beckett fight took place it was arranged that as soon as the result was telephoned to Hounslow an Avro biplane should fly over London firing coloured lights to indicate the name of the victor—red for Beckett and green for Carpentier. This programme was successfully carried out. Luckily the night was clear, though the wind was strong.

The Avro, piloted by Major A. G. Taylor, A.F.C., the Avro London manager, had a hard fight against the wind on the journey back, but, despite these conditions, a perfect landing was made. The flight lasted about three-quarters of an hour, and practically the whole of London was covered. A representative of the "Evening News" had a seat in the machine.

CANADA.

"Automotive Industries" of Nov. 9th states that Handley Page, Ltd., have secured a Dominion charter to engage in a general aeroplane business in Canada. The capital stock will be $2,500,000. The head offices will be at Morrisburg, Ont. The directors are William Harold and Admiral Mark Kerr, London, England; Harry Clark, Montreal; Fred Chalmers and W. H. Gannon, Morrisburg.

INDIA.

An aerial mail service is to be started between Bombay and Karachi on Jan. 1st. When the service starts letters from Karachi to Great Britain will catch the mail boat at Bombay if posted twenty-four hours later than usual.

SOUTH AFRICA.

The South African correspondent of THE AEROPLANE writes :

"KING OF THE AIR."

The B.E.2e biplane which flew from Johannesburg to Banana Siding and back, piloted by Lieut. A. H. Gearing (ex-R.A.F.), has been flown to Pretoria for dismantling and subsequent storing in Cape Town. Lieut. Gearing is finished with flying for exhibition purposes, and henceforth will devote himself to his engineering business in Cape Town.

S.A.A.T. LTD.

South African Aerial Transports, Ltd., are the sole agents in South Africa for A. V. Roe and Co., Ltd.

The first passenger flight was made at Johannesburg by Capt. Ross, D.F.C., who took up the mayor of the town, Mr. T. A. Allen, after the machine (an Avro biplane, 110-h.p. Le Rhone engine) had been duly christened "The Rand Queen."

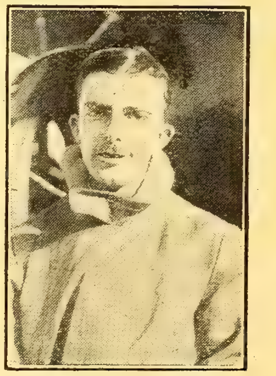
After the flight Capt. Ross made a pretty speech to the vast assemblage, assuring them of the joys of "flipping," etc., and the splendid prospects in front of the company in spite of the uphill work they would have to do at the start.

Col. Armes responded fittingly.

The comedy "Going Up" was produced at the theatre at the same time as the first flight was made, and the coincidence of production provided a grand opportunity for mutual back-scratching for the theatre management and the aviation company with mutual benefit.

One machine is now in commission under the pilotage of Capt. Ross. There is a steady stream of passengers of both sexes, who are charged a minimum of £5 for twenty minutes' flight. The public are in need of a great deal of aviation education, but they want it none too expensively.

LIEUT. A. H. GEARING.



CAPT. ROSS, D.F.C.

Two three-seater Avros have been received at the aerodrome and are in course of construction. It is also on the "tapis" to bring out from England a Vickers all-steel "Vimy," possibly under its own power.

THE HANDLEY PAGE AGENT.

Capt. S. Wood is reported to have said that his firm will have machines in Johannesburg for the season, which begins normally on Nov. 1st.

ANOTHER FIRM.

Two men by the name of Robinson possess two aeroplanes, which they are going to use for passenger carrying.

MUIZENBERG.

One of the two latter concerns intends to give trips at Muizenberg during the months of Dec., Jan. and Feb., when the resort is crammed with the wealth and gout of the "Golden City."

The S.A.A.T., Ltd., are also considering the advisability of making a little money at Muizenberg during the season. Unfortunately for all, there do not appear to be any fields suitable for flying-grounds.—H. G.

SOUTH AFRICA.—THE FIRST LOOP.

Several passengers were taken up at the Baragwanath aerodrome (Johannesburg) on Nov. 2nd, although the weather was not good. Late in the afternoon Col. Armes, C.M.G., the managing director of Aerial Transports, Ltd., was taken for a flight by Capt. Rutherfoord on an Avro machine and was looped. The Johannesburg "Star" claims this to be the first loop to have been made in South Africa.

THE CAPE TO CAIRO FLIGHT.

Major Court-Treatt, surveying aerodromes for the Cape to Cairo flight, left Johannesburg some time ago on a Buick car to establish an aerodrome near Lake Tanganyika. Major Court-Treatt left the car at the aerodrome for their use and was expected back in Johannesburg in the last week of November.

BRAZIL.

Congress has approved of the Handley Page mail contract for a service from Pernambuco to Buenos Aires, a distance of 2,500 miles, which is to be covered in 3½ days in a weekly service. At present the ordinary mail-boats take nine or ten days on the route. Other services approved are Rio Janeiro-Sao Paulo, and Sao Paulo-Santos.

According to the "Times" of Dec. 4th, the Handley Page Company have sent, or are sending, out to Brazil twenty-four machines, which, besides carrying the mails, will inaugurate passenger and freight services. The machines are of the two-engine type, with a carrying capacity of 2,500 lb.

DENMARK.

The Danish correspondent of THE AEROPLANE writes :—

THE FATE OF THE "GOLIATH."

The long-announced Lieut.-Col. Henderson has finally arrived at Copenhagen on an Armstrong-Whitworth biplane, after a forced intermediate landing owing to a prevailing snowstorm at Hamburg. There he met the Danish-French Lieut. Krause-Jensen, the pilot of the ill-fated Farman-Salmson-engined "Goliath," which, after a long involuntary stay in Denmark owing to engine breakdown on the return flight to France, had had to land in Holstein owing to fog, and was held up for lack of petrol till a French cruiser brought the precious fluid. The "Goliath" came to grief finally in a marsh near the Dutch frontier. The pilot, M. d'Ors, deceived by the snow, though he had a suitable landing-ground before him, but the landing was disastrous.

AN "ALBATROS" FOR BUSINESS USE.

The Sleswig pilot Schmidt has sold his Albatros biplane for 10,000 kr. (£550) to a provincial automobile dealer, who has erected a shed in his native city, Herning, in Jylland, and has engaged another German aviator, Hecken, as pilot, as he intends to employ the aircraft for business trips to Copenhagen.

IS EXCHANGE ROBBERY?

The Grahame-White pilot, Capt. Chamberlain, has arrived at Copenhagen, with Mr. Hobday as passenger, in an Avro biplane. Mr. Hobday is a director of the Dominion Belting Co. He negotiated his first business after an intermediate landing at Brussels. The next stage ended at the Soesterberg Aerodrome, in Holland, the usual stopping-place en route to Scandinavia.

Finally, a forced landing was made by Bremen, where the reception by the inhabitants was none too kind till the stores and tobacco on board the machine were distributed, when they succeeded in acquiring a 260 h p. Rumpler and set off for the Danish capital before the local authorities turned up to arrest them.

After local business with the branch in Copenhagen the pilot and passenger may continue to Stockholm or may return to England by air.—HI.

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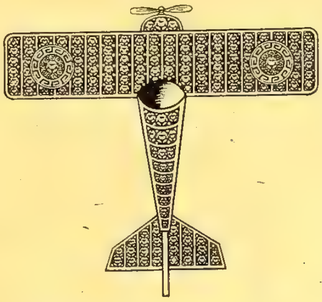
£20.



Diamond Aeroplane, with Identity Circles of Sapphires. Ruby Centres.
£125 0s. 0d.

Diamond Scarf Pin, Set in Platinum.
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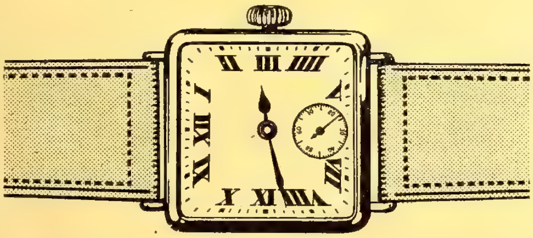

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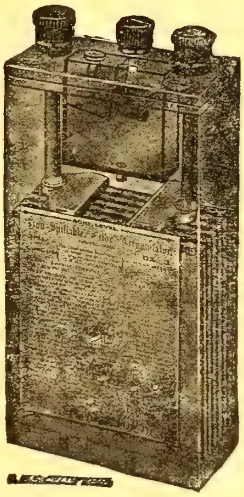

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FINLAND.

A Reuter message from Helsingfors, dated Dec. 4th, stated that M. Frenckel, the president of the Finnish Aero Club, had informed the "Ussi Suomi" that he intended to establish an aerial mail service between Stockholm and Helsingfors, and that he was also planning a regular service with Reval and Petrograd, and possibly Berlin and London.

FRANCE.

LANDING GROUNDS.

At Perpignan there is a landing-ground without shed accommodation, and at Canet-plage a landing-ground with accommodation for aircraft.

The landing-grounds at Sarreguemines, Schlestadt, Neu-Brisach and Amiens have been abolished. That at Issoudun has been replaced by one at Romorantin, where there are buildings and fuel.

THE PARIS-MELBOURNE FLIGHT.

M. Poulet, on his Caudron biplane (two 110-h.p. Le Rhone engines) reached Akyab on Nov. 28th, and arrived at Rangoon at 12.45 p.m. on Nov. 30th. He landed forty-five minutes after the Vickers "Vimy." M. Poulet arranged with Capt. Ross Smith that they would both leave Rangoon for Bangkok at 7.0 a.m. on Dec. 1st.

Apparently the arrangement was adhered to, as Reuter messages stated that he left Rangoon at that time, and arrived at Bangkok on the same day just before Capt. Ross Smith. There M. Poulet handed over to the Minister of War the documents which were entrusted him by the chief of the Siamese mission in Paris. He left Bangkok on Dec. 2nd for Singapore, intending to alight for supplies on the eastern coast of the Malay Peninsula, about 400 miles away.

A Reuter message states that if M. Poulet arrives at Melbourne he will give a series of exhibitions in Adelaide, Sydney and Melbourne, and then fly over Borneo and up the Chinese coast to Japan, whence he will return to India and to France by the original route.

Thus he may cover his expenses, and also aid the widow and children of Vedrines, who was killed on an Alpine flight.

THE SALON DE L'AERONAUTIQUE

The President of the French Republic received last week a delegation from the Executive Committee of the French Aero Show. The Committee was composed of MM. Leblanc, President; Louis Bréguet and Luquet de Saint-Germain, Vice-Presidents; and M. André Granet, Commissaire-General.

After having discussed for a considerable time with the delegation questions concerning the future of France and the aeronautical industries, M. Raymond Poincaré kindly consented to open the Exhibition on Friday, December 19th, at 10 a.m.

A MARSEILLES-TUNIS SERVICE.

A correspondent writes :—

The Aeronovale Company have nearly completed their machine for a service between Marseilles and Tunis, to begin in February, 1920. This machine has one Salmson and two 120-h.p. Le Rhone engines, but otherwise is of typical French design. It will carry ten passengers besides freight, in all nearly a ton.—J. S.

A NEW PRIZE.

At a general meeting of the Aero Club de France, M. Soreau stated a new prize of 100,000 francs (normally £4,000) has been offered, the details of which will shortly be announced.

A REMOVAL OF THE BREGUET OFFICE.

The head office of the Breguet firm has been moved from 17 rue du Colonel-Moll to 115 rue de la Pompe, in Paris.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

AVIATORS' TRADE UNIONS.

The Roman section of the Aviators' "Trade Union" was formed the other day and numbers 500 members, who are nearly all pilots. The director is Col. Piccio, and Col. La Polla is second in command. The Milan section was to be formed on the 7th inst.

THE ITALIAN ATLANTIC FLIGHT.

Reports from Turin show great preparations for great things. The Italian crossing of the Atlantic is said to be awaiting D'Annunzio. One wonders which of the two biggest aeroplane firms will be ready first. It is curious that no one seems to have thought of quoting a real aquatic flying machine as the vehicle most adapted for the flight.

NEW MACHINES.

I am waiting news from Signor Ricci at Naples, whose big seaplane designs are taking form and should soon get moving over the face of the waters. A very big machine is in the building at Bastianelli's works, so that the South is still alive. A 300 h.p. H.-Suisa-engined machine is reported to be preparing to take the air at Palermo. Built at the Ducrot shops, the biplane has a steel strut at the extreme ends of the cellule. Speed would seem its prime object.

Five different types of small aeroplanes, of about 30 to 40 h.p., are at present existing in this country.

FOR AVIETTES.

One Zoboli, of Bologna, invites investigations by the competent into his means of transmitting leg-force to airscrews, which he believes will render the aerial bicycle possible. The secret evidently lies in the light weight of the gearing-down mechanism in this case.—T. S. H.

SWITZERLAND.

The Italian correspondent of THE AEROPLANE writes :—

A FRENCH-SWISS CONFERENCE.

A French-Swiss conference, on the lines of the Anglo-Swiss one held a few days ago, took place last week at Berne, and an agreement was drawn up as to flights over each other's territory and permits to fly. Col Borel, Maj. Issler, Prof. Pittard, and Col. Loriol represented the Confederation; Capitaine Roper and M. De Lens the French Republic. M. De Lens is a secretary to the French Embassy. Switzerland signed at once; France referred the matter to H.Q.

AN AERO TRADE CENTRE.

It seems that Locarno is going to become one of the great jumping-off grounds for the northern aero trade towards the Mediterranean countries.—T. S. H.

THE HANDLEY PAGE W.8.

After lengthy experiment the firm of Handley Page, Ltd., assisted by the experience gained in the production of bombing machines, have built a large commercial machine capable of carrying 15 to 20 passengers or heavy loads of cargo up to two tons.

The machine is designed so as to provide a single large saloon 22 ft. long, 4 ft. 6 in. wide and 6 ft. high. This is unique in the history of aeroplane construction. The space provided is entirely unobstructed by wires or cross struts, and when used for carrying cargo entirely, 470 cubic feet of space is available. The seats for the pilot and engineer are in a well protected cockpit immediately forward of the saloon.

Port hole windows, which can be opened or shut, are provided along each side of the passenger cabin, one for each occupant. In the floor, lenses are fitted in order to provide a direct view downwards.

The interior of the saloon is fitted with velvet cushioned armchairs with receptacles for maps, carpets, curtains, electric light, lamps, clocks, mirrors, wireless apparatus, a telephone, flower vases, books and papers. A lavatory is also provided.

When carrying large consignments of cargo, light racks, shelves and cupboards can be fitted on either side of the cabin, leaving a central gangway. Large doors are fitted in the side of the machine and there is a trapdoor in the floor to facilitate the entry and removal of freight. A door also communicates between the passenger saloon and the pilot's cockpit.

The engines are provided with effective silencers to enable conversation to be carried on amongst the passengers.

The large reserve of engine power possessed by the machine enables it to ascend with full loads out of very small fields, and this extra power can also be utilised when flying in strong head winds. The aeroplane can be flown entirely on one engine should the other fail.

The machine, with the exceptions of the steel undercarriage and the engine nacelles, is entirely painted white. In the air it has a very pleasing appearance, and flies very steadily. The striking feature when seen on the ground is the immense balanced rudder and the large fin. A monoplane tail plane is fitted.

After only one test flight of 20 minutes the machine was flown by Mr. Bager from Hounslow to Le Bourget in 2 hours 10 minutes on Dec. 4th for exhibition at the Salon de L'Aeronautique (Paris) whence it is to be transported by road.

SPECIFICATION.

Type of machine	Twin-engine biplane.
Name and type No. of machine	Handley Page W.8.
Purpose for which intended	Commercial
Span	75 ft.
Overall length	60 ft.
Maximum height	17 ft.
Maximum width with wings folded	29 ft.
Engines, type and h.p.	Two 450-h.p Napier "Lion."
Tank capacity	Petrol 250 galls.; oil, 37.5 galls.
Carrying capacity	15-20 passengers or 2 tons freight.
PERFORMANCE—	
Speed (maximum)	112 m.p.h.
Normal cruising speed	90 m.p.h.
Landing speed	45 m.p.h.
Duration of flight	6½ hours

INTERNATIONAL AIRCRAFT EXHIBITION

PARIS.

December 19th, 1919—January 4th, 1920.

The "Bristol" Aeroplanes

may be inspected on

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Telegrams: "*AVIATION, BRISTOL.*"
Telephone: 3906 *BRISTOL.*

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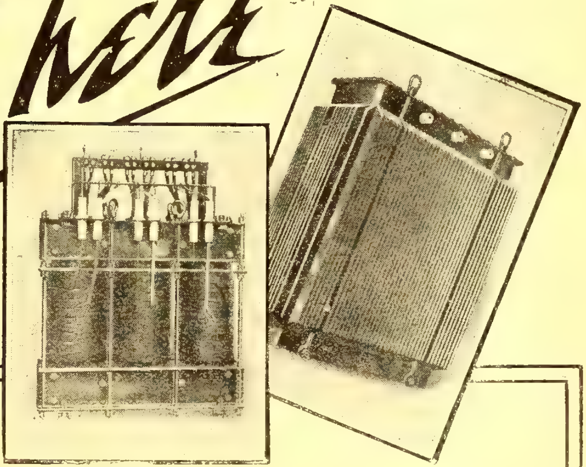

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AIRCRAFT IN PARLIAMENT

HOUSE OF COMMONS.

Dec. 1st.—The following oral answer was given :—

AIRCRAFT SUPPLIES.

Lieut.-Col. Sir F. HALL asked the President of the Board of Trade if he had had his attention drawn to the great efforts which are being made by American trading interests, with the United States Government's co-operation, to develop the South American markets for aircraft supplies and aircraft transport undertakings; and if he will state what is being done by the British Government in the same direction with a view to stimulating this important industry in this country.

Sir A. GEDDES : The answer to the first part of the question is in the affirmative; as regards the second part of the question, several important British aircraft firms already have their representatives in a number of the South American Republics, and His Majesty's diplomatic and commercial representatives in those countries are assisting, and will continue to assist, them as far as lies in their power. British firms in this country are being kept in touch with developments, information concerning which is unlikely to reach them through their local representatives.

The following written answer was given :—

ANTI-AIRCRAFT STATION, PUTNEY HEATH.

Mr. LORDEN asked the Secretary of State for War why the anti-aircraft station at Putney Heath on and adjoining the Metropolitan Water Board's reservoir is still continued, seeing that the urgent need has ceased to exist for over twelve months, in view of the danger to the health of the Metropolis caused by the very dirty and unsatisfactory state of the station.

Mr. FORSTER : It is proposed to maintain these headquarters, though not necessarily on the present site, as part of the permanent scheme of anti-aircraft training. Until a new permanent site has been acquired no other accommodation is available for the personnel, stores and equipment.

* * *

Dec 2nd.—The following oral answers were given :—

ROYAL AIR FORCE (BOULOGNE DEPOT).

Capt. GUEST (Joint Parliamentary Secretary to the Treasury), replying to Captain Terrell, said that the mechanical transport at the port depot of the R.A.F. at Boulogne consists of one touring car and one light tender. The staff consists of one officer and four airmen. The depot is being kept open to deal with the drafts of airmen arriving from England daily and with the evacuation of airmen from France.

CIVILIAN AIR SERVICE (PARIS-LONDON).

Lieut.-Col. GUINNESS asked the Secretary of State for War whether there are at present any facilities for the repair of British aeroplanes or the supply of spare parts in connection with the daily Paris-London air service at any aerodrome in France except the terminus at Le Bourget, and whether it is not a matter for the British authorities. Is the hon. gentleman aware that there are now three different British types of machine flying this route of 130 miles over French ground, and is it not obviously impossible for these companies to provide the necessary facilities for small adjustments before crossing the Channel.

Capt. GUEST : I have been asked to take this question, the reply to which is in the negative. Certain emergency landing-grounds exist between Gris Nez and Le Bourget. The importance of establishing a civil aerodrome with full facilities in the vicinity of Gris Nez is known to the French authorities, and it is understood that they intend to provide such an aerodrome. The question of whether it is a matter for the British authorities is complicated by the fact that we are dealing with a civilian service and not a military service, but the department is in communication with the French authorities on the subject.

ROYAL AIR FORCE.

Mr. CHURCHILL, replying to Major Steel and Earl Winterton, said that he proposed at an early date to lay before the House a Memorandum by the Chief of the Air Staff showing the proposed strength and composition of the R.A.F. for the next few years.

Replying to Mr. Pemberton-Billing, he said that opportunities for debate were fixed in the regular course of the Parliamentary Session and did not arise in consequence of any announcement of this kind.

WIRELESS COMMUNICATION (LONDON AND PARIS).

Lieut.-Col. GUINNESS asked the Secretary of State for War whether, owing to the interruptions caused by the Eiffel Tower wireless station last week, when messages sent in connection with the London-Paris air-mail service were regularly jammed by the Eiffel Tower, the air-mail messages can be received by the wireless station at Le Bourget; and whether any arrangement has been made with the Eiffel Tower Company.

Capt. GUEST : I have been asked to reply to this question. Routine times of transmission from London to Le Bourget have been arranged so as to avoid the interference referred to by my hon. and gallant friend. In cases when it is doubtful if the message has been received by Le Bourget, a second message is always sent; during the last week these messages have been received regularly, and no repetition has been required. Air route reports of the British and Channel weather conditions are sent from London to Le Bourget between 8 a.m. and 3 p.m. An arrangement for a special allowance of time has been made in regard to the Eiffel Tower station.

AIRSHIPS (BERLIN AND FRIEDRICHSHAVEN).

Col. NEWMAN asked the Secretary of State for War whether a service of dirigible airships is being maintained between Berlin and Friedrichshaven; how many airships are so employed; and will he say whether the establishment and maintenance of a fleet of airships in Germany, whether by the State or private individuals, was a matter laid down in the Peace Treaty.

Capt. GUEST : I have been asked to reply to this. The answer to the first part of my hon. and gallant friend's question is in the affirmative; to the second part, that, so far as is known, only one airship—the "Bodensee"—has been so employed. As regards the third part, I would suggest that the question should be addressed to my hon. friend the Under-Secretary of State for Foreign Affairs.

The following written answer was given :—

ROYAL AIR FORCE CIVILIANS (DISCHARGE).

Capt. GUEST, replying to Mr. A. Davies (Clitheroe), said : Telegraphic instructions to suspend the demobilisation of civilian subordinates until further orders were sent to Royal Air Force depots on Nov. 15th, and the receipt of these instructions has been acknowledged by Ascot and the other depots concerned.

* * *

Dec. 3rd.—The following oral answer was given :—

LONDON-PARIS AIR-MAIL SERVICE.

Lieut.-Col. GUINNESS asked the Postmaster-General whether instructions have been given at the post office in Parliament Street that letters for the London-Paris air-mail service are only to be accepted for posting in the morning; what is the reason for preventing the posting of such correspondence daily at the end of business hours; and whether he will now arrange for its acceptance at any time of the day at the eight post offices mentioned in the original announcement.

The ASSISTANT POSTMASTER-GENERAL (Mr. Pease) : No instructions have been given for the refusal of aeroplane letters tendered at the Parliament Street branch office in the evening for dispatch by the air-mail service to Paris on the following day; and steps have been taken to prevent the refusal of such letters at any of the eight London offices at which correspondence may be posted for transmission by the air-mail service.

The following written answer was given :—

ROYAL AIR FORCE (KENLEY COMMON).

Sir ALBION RICHARDSON asked the Secretary of State for War whether the military authorities are still in possession of Kenley Common, which was taken over during the war for military purposes; if so, when is it proposed to vacate the common and to restore to the public their right to the full use of the same, and what is the reason for the delay in so doing.

Mr. CHURCHILL : The answer to the first part of this question is in the affirmative; and to the second and third parts, that, owing to the importance of this aerodrome both from a Service and civil point of view, it is desired to retain it as a permanent station. Negotiations are in progress with this end in view.

* * *

Dec. 4th.—The following written answers were given :—

AERIAL ROUTE, EGYPT AND THE EAST.

Lieut.-Col. MALONE asked the Secretary of State for War whether it is intended that the aerial route to Egypt and the East should pass *via* Malta.

Mr. CHURCHILL : No decision has yet been arrived at in regard to this.

AIR MINISTRY (STAFF).

Lieut.-Comdr. KENWORTHY asked the Secretary of State for War what is the present staff of the Air Ministry; and how many of these are employed in connection with civil, naval, and military aviation, respectively.

Mr. CHURCHILL : The staff of the Air Ministry at the end of November last numbered 2,539. This figure includes the staff recently taken over from other Departments in connection with the transfer of airship work and of the Meteorological Department to the Air Ministry—namely, 136 and 130 respectively. I am unable to supply the statement asked for by the hon. and gallant gentleman in the second part of his question, as it is impracticable to separate the staff into groups employed respectively in connection with civil, naval, and military aviation.

ROYAL AIR FORCE OFFICERS.

Sir BERTRAM FALLE asked the Secretary to the Admiralty what gratuity or pension is given to petty officers promoted warrant officers after eight years' service and automatically promoted to second lieutenants, Royal Air Force, on amalgamation of the Royal Naval Air Service and Royal Air Force; and if such officers, demobilised at their own request and in receipt of the permanent officer's gratuity, receive the difference between that gratuity and the gratuity given a temporary officer.

Mr. CHURCHILL : The whole question of the gratuities or pensions to be paid to Royal Air Force officers (temporary and permanent) who when commissioned in the Air Force were serving as warrant officers, Royal Navy, or Royal Naval Air Service, has been under consideration for some time, and it is anticipated that a final decision will be announced shortly.

THE FLIGHT TO AUSTRALIA COMPETITION.

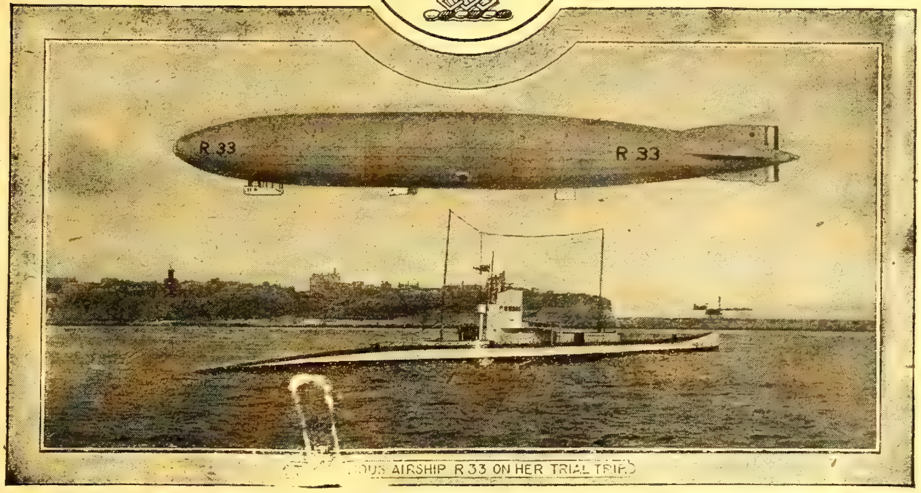
The Air Ministry announced on Dec 3rd that the Netherlands authorities had provided new landing grounds in the Dutch East Indies which will be of great assistance.

The location and distance of the aerodromes from Rangoon are as follows :—

Miles from Rangoon.	
427	Bangkok (Siam).
1,246	Singapore (Fed. Malay States).
1,529	Banka (Banka Island).
1,798	Batavia (Java).
1,863	Kalidjah (Kalidjati, Java).
2,054	Samarang (Java).
2,215	Surabaya (Java).
—	Bali (Bali Island).
—	Lombok (Lombok Island).
2,653	Bima (Soembawa).
2,775	Reo (Flores Island).
2,948	Larantuka (Flores Island).
3,098	Atamboea (Timor Island).
3,560	Port Darwin (Australia).

The Dutch authorities hoped to complete the arrangements in these islands by the end of November. The provision of these landing places will enable the flight from Java to Port Darwin to be made in easier stages than was originally contemplated.

A Dutch official is being sent to Singapore by the Government of the Dutch East Indies to give all detailed information.



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CABIN:—Is clear of any transverse cross bracings or other obstruction, and measures 8 ft. by 3 ft. 3 ins. by 6 ft.—this in a machine of only 33 ft. overall length. Direct entry off ground through ordinary door.

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FUEL COST AT FULL LOAD: 7½ pence per mile.

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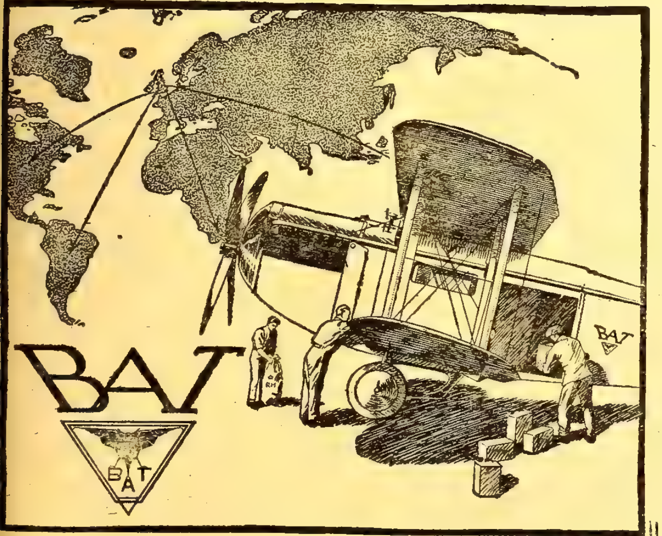

The Australian authorities have also intimated that they have organised a route from Port Darwin to Melbourne :—

Miles from Port Darwin.

—	Port Darwin (N. Territory).
170	Katherine (N. Territory).
405	Newcastle Waters (N. Territory).
530	Anthony Lagoon (N. Territory).
730	Avon Downs (N. Territory).
915	Cloncurry (Queensland).
1,230	Longreach (Queensland).
1,473	Charleville (Queensland).
1,728	Bourke (New South Wales).
1,936	Narromine (New South Wales).
2,111	Cootamundra (New South Wales).
2,396	Melbourne (Victoria).

Full information regarding the facilities actually available at each station will be furnished by officials stationed at Port Darwin, Cloncurry, Charleville and Narromine

In order to minimise the risk to competitors while flying over the sea from the Island of Timor to Port Darwin, the Australian Defence Department has also arranged for the Royal Australian Navy, when warned by competitors, to maintain a patrol between these points

The Government of Australia has arranged for the competitors for the £10,000 prize and M. Poulet to receive daily weather forecasts after reaching Java.

The Commonwealth meteorologist will prepare the forecast, which will be wirelessed from Port Darwin to Timor, and cabled thence to Batavia, where the British Consul will transmit the message to the aviators.

THE VICKERS "VIMY" MACHINE.

The following telegram has been received from Basra dated Nov. 21st :—

Last cable Cairo 18th. Left next day 10.30. Dull weather. Crossed Canal Kantara, then over Romani, along coast under thick cloud to Gaza. Turned inland to Ramleh, then Haifa. Owing heavy rain flew low to Jordon over Sea Galilee, thence Damascus. Interesting seeing old places again recalling memories war. Landed Damascus three. Met many old R.A.F. friends.

Nineteenth delayed until eleven; first rain since March; ground getting sticky, oiled tyres to stop mud sticking and left. Flew low Tadmor. Turned east. Crossed desert Abu Kemal. Followed Euphrates. Met head wind, landed Ramadie battlefield at dusk. Pegged down machine. Heavy gale night. Turned out troops hold machine. Anxious time two hours, but Vimy weathered storm.

Twentieth, left Ramadie one fifteen. Good wind. First good flying day of journey. Passed Bagdad, Kut, Garden Eden. Landed Basra four forty.

Overhauling to-day. Bunder Abbas to-morrow. Yesterday weather cheered all considerably after ten days trying condition. Crew well. Engines behaving beautifully.—Ross Smith.

The following telegram, dated Nov. 30th, has been received from Milan :—

"Ross Smith left Bushire twenty-third instant."

The Vickers "Vimy" arrived at Calcutta at 1.30 p.m. on Nov. 28th and left for Akyab at 8.30 a.m. on the next day. Akyab was reached at 2 p.m. and Rangoon at noon on Nov. 30th. Forty-five minutes later M. Poulet landed with his Caudron biplane (two 110 h.p. Le Rhone engines).

Both pilots arranged to leave Rangoon for Bangkok at 7 a.m. on Dec. 1st.

The following cablegram, dated Dec. 4th, has been received from Singapore :—

We left Rangoon at 7 on Dec. 1st and arrived at Bangkok at 1. We passed through a heavy storm above the mountains. South-east of Moulmein a thick cloud delayed us. We climbed to 9,000 ft. and got over the worst of it. Then we followed the River Menam south. Every convenience was prepared for us by the Siamese Aviation Corps.

At Bangkok the greatest assistance and courtesy was shown by Prince Pitsanoluke and the aviation corps. We left Bangkok on Dec. 2nd. We were escorted to Singora for the first 50 miles by four Siamese machines. Course south along the east coast of Malay for the first two hours was good, but we then met a heavy monsoon.

The wind was strong and changeable, sometimes helping us and sometimes against us. It was necessary to fly at the height of 500 ft. for three hours, following the coast, almost blinded by the rain, but the country was impossible for landing and we had to continue, hoping for the best in the worst flying conditions ever encountered. The last hour was better.

The aerodrome at Singora is bad and stumpy. We had to land in a cross wind, on a small dry patch. We got safely down with luck, but later, in "taxi-ing" the machine, the tail-skid caught a root and broke a fitting. The damage is not serious. The local population showed great interest at the sight of the aeroplane.

I decided that, owing to the weather, I could not reach Singapore without more petrol, and wired to the Asiatic Petroleum Company at Penang to send some urgently. During the night there were heavy squalls, and the crew held the machine all night. Great assistance and kindly hospitality was given by Prince Yugala and the local officials.

Dec. 3rd.—Torrential rain with wind, and we repaired the skid and the crew were wet through with working at the machine all day. Petrol arrived in the evening, but it was raining too hard to put in.

Dec. 4th.—My birthday. Had decided to try for Singapore. We left Singora at 10 and arrived at Singapore at 5. The take-off at Singora was very rough, but convicts had cleared the stumps yesterday. The aerodrome was very wet in patches. We were lucky to get off in a cross wind. Rain all the way. We flew at a height of 2,000 ft. to 500 ft. all the way. A great reception here and a huge crowd. Hope to reach Java on the 6th and Darwin on the 10th. Vimy and crew all well.—Ross Smith.

A Reuter message from Batavia, dated Dec. 6th, stated that Capt. Ross Smith arrived at Kalidjatti, near Bandoeng, West Java, at 4.7 p.m. on that day.

THE BLACKBURN "KANGAROO."

The Air Ministry announced on Dec. 4th that the Blackburn "Kangaroo" (two 250-h.p. Rolls-Royce "Falcon" engines), which left Hounslow on Nov. 21st with Capt. Wilkins, M.C., and Lieuts. Rendle, Williams, and Potts. arrived at Taranto at 2.0 p.m. on Dec. 3rd, and left for Suda Bay (Crete) on the next day.

THE SOPWITH MACHINE.

The only reason for the silence of Capt. Matthews and Serjt. Kay seems to be that they have been held up at Mayence by very bad weather. On Nov. 29th they decided to proceed on the way to Belgrade. They landed at Vienna in the evening owing to the weather and shortage of petrol.

THE MARTINSYDE MACHINE.

Capt. C. E. Howell, D.S.O., M.C., D.F.C., the pilot of the Martinsyde machine, holds a remarkable record of war service so far as Australian aviators are concerned. He was in the Australian Infantry until 1916, when he joined the Royal Flying Corps. He quickly qualified as a pilot, and the records show that he has 2,000 hours' flying time to his account.

Capt. Howell crashed 32 enemy aeroplanes, and in addition he is officially credited with bringing down eleven others out of control, and shooting down a number of balloons and kites. His D.S.O. was gained in a fight over the enemy lines, when in twenty minutes he accounted for seven enemy aeroplanes. On this occasion his own machine was so badly damaged that it was with great difficulty he returned to his own aerodrome. His assistant is Air-Mechanic Henry Fraser.

A correspondent writes : Before proceeding to Hounslow on Dec. 2nd the Martinsyde machine (275-h.p. Rolls-Royce "Falcon" engine) circled over the Martinsyde works at Woking for some time by way of farewell, and came down very low. The pilot, Capt. Howell, D.S.O., M.C., D.F.C., was reported to have been very pleased with the behaviour of the machine on its final test flights.

A description of the machine was given in the "Aeronautical Engineering" supplement on Nov. 5th. It will be remembered that the machine is to be fitted with floats at Calcutta, and will then fly to Australia as a seaplane.

The start was delayed for a week by adverse weather. Capt. Howell became determined not to delay further, and left Hounslow Aerodrome at 9.24 a.m. on Dec. 4th, during an interval between two heavy rain storms in weather which was not favourable. The machine rose from the ground very quickly in the face of a strong westerly wind. It climbed to a height of about 2,000 ft. before Capt. Howell waved a last farewell to his friends on the ground, when he turned towards the coast, and, flying down wind at a great speed, he was very soon lost to sight in the rain clouds that prevailed.

Messages expressing good wishes were received from Capt. H.R.H. the Prince Albert, K.G., R.A.F., Mr. Winston Churchill, M.P., and Major-Gen. Sir F. H. Sykes, C.B.E., K.C.B., C.M.G.

Martinsydes, Ltd,, received a cable on Dec. 6th, which stated that Capt. Howell landed at Pisa on Dec. 5th at 4.0 p.m.

The machine arrived at Capua on Dec. 6th. On the 7th she was held up by the weather. On the 8th she arrived at Taranto and was leaving on the 9th for Suda Bay.

There are at present five aeroplanes on the way to Australia, and the points they have reached, according to the latest information, are shown below :—

Date of Start.—Oct. 14th.—M. Poulet Caudron. Bangkok.
Oct. 22nd.—Capt. Matthews. Sopwith. Vienna.
Nov. 12th.—Capt. Ross Smith. Vickers Vimy. Java.
Nov. 21st.—Capt. Wilkins. Blackburn. Taranto.
Dec. 4th.—Capt. Howell. Martinsyde. Pisa.

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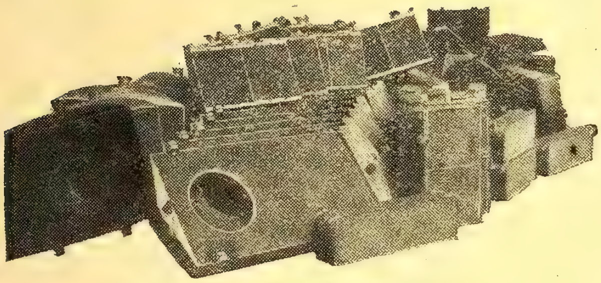

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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

Admiralty, Nov. 22nd.

Surg. Lt.-Cmdr to be Surg. Cmdr.—L. L. Greig, M.V.O., M.B.

MILITARY.

War Office, Dec. 1st.

Territorial Force.—Northern Cyc. Bn.—Lt. J. W. D. Leigh, M.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

War Office, Dec. 2nd.

Regular Forces.—Memoranda.—Lt. F. Baker (attd. R.A.F.) retires, receiving a gratuity, Dec. 3rd.

Sec. Lt. A. E. Houghton (attd. R.A.F.) retires on ret. pay, Dec. 3rd.

Territorial Force.—Infantry.—6th Bn., Notts. and Derby R.—Lt. R. W. Cash to be Capt., and to remain secd., R.A.F., June 13th.

War Office, Dec. 4th.

Territorial Force.—R.G.A.—Lt. J. F. Lawson, A.F.C., S. Mid. R.G.A., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

War Office, Dec. 8th

Regular Forces.—Establishments.—R.F.C.—Military Wing.—Flying Officers.—Temp. Sec. Lt. E. G. Boyle, Gen. List, March 13th, 1918; temp. Sec Lt H. P. Brumell, Gen. List, Mrach 25th, 1918.

AIR FORCE.

Air Ministry, Dec. 2nd

R.A.F.—The following are granted permanent commns. in the ranks stated, with effect from Aug. 1st:—

Flt. Lts.—A. Gray, M.C. (A.), *A. P. Maurice, D.F.C. (A.), *O. C. Bryson, M.C., D.F.C., A.M. (A.), J. A. MacNab (O.), *D. S. Earp (O.).

Flying Officers.—*A. L. M. Van der Byl (A.), R. M. Trevethan, M.C. (A.), G. E. Randall, D.F.C. (A.), C. L. Wauchope (A.), A. Jerrard, V.C. (A.), J. M. Mason, D.S.C., D.F.C. (A.), L. C. Hootton, M.C. (A.), *H. C. E. Bockett-Pugh (A. and S.), *L. M. Hilton (A.), *A. F. Lang (O.), C. A. Bouchier, D.F.C. (A.), H. A. Haines, D.F.C. (A.).

The classification of Capt. A. A. B. Thomson is "(A.)," and not "(S.)," as stated in "Gazette," Aug. 1st.

The notification in "Gazette," Aug. 1st, appointing Maj. C. S. Fanby, M.C. (A.), to a permanent commn is cancelled.

The notification in "Gazette," Aug. 1st, appointing Capt. T. Gran (T.) to a permanent commn. is cancelled.

The following temp. appt. is made at the Air Ministry:—Staff Officer, 3rd Class.—(P.) Flt. Lt. A. H. Stradling, Nov. 18th.

Flying Branch.—Capt. C. B. Dalison, A.F.C., is graded for purposes of pay and allowances as Maj. while empld. as Maj (A. and S.), from May 1st to Oct. 23rd (substituted for notification in "Gazette," Oct. 21st).

Flt. Lt. (actg. Sqdn. Ldr.) S W. Dunckley relinquishes the actg. rank of Sqdn Ldr. on ceasing to be empld. as Sqdn. Ldr. (A.), Nov. 11th.

Flying Officer (actg. Flt. Lt.) E. Burney, M.C., relinquishes the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lt. (A.), Nov. 11th.

Sec. Lt. S. Soothill to be Lt., Nov. 13th, 1918

Pilot Officer N. Hickson to be Flying Officer, Sept. 9th.

Sec. Lt. W. C. Snowdon (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (O.), June 3rd, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flying Officer K. M. Harris (Sec. Lt., Suff. R.), Nov. 1st; Flying Officer C. Joiner (Lt., E. Surr. R.), Nov 8th; Flight Lt. C. R. Richardson (Lt., E. Yorks. R.), Nov. 10th; Flying Officer E. G. Williams (Lt., Essex R.), Nov. 10th; Flying Officer P. Perfect (Lt., K.O.S.B.), Nov. 12th; Flight Lt. R. F. S. Manduit, M.C. (Lt., Dragn. Gds.), Nov. 17th; Flying Officer J. C. C. Piggott (Lt., Duke of Corn. L.I.), Nov. 18th.

The following relinquish their temp. R.A.F. commns. on return to Naval duty:—Sqdn. Ldr. R. S. Robinson, O.B.E. (Lt.-Comdr., R.N.), Oct. 14th; Pilot Officer D. P. Davidson (Sub. Lt., R.N.), Nov. 3rd; Flying Officer R. B. Gibb (actg. Lt., R.N.), Nov. 8th.

Flight Lt. G. E. Wildman-Lushington (Capt., R. Marines) relinquishes his temp. R.A.C. commn. on return to duty with R. Marines, Oct. 23rd.

Transferred to unempld. list:—Lt. G. Smith, Jan. 30th; Sec. Lt. (Hon. Lt.) A. C. McKinnon, Feb 1st; Sec. Lt. N. Howl, Feb. 4th; Sec. Lt. C. E. Fabian, March 10th; Sec. Lt. S. G. Amor, March 15th; Lt. F. E. Davy, March 19th; Sec. Lt. R. L. Ford, March 23rd; Lt. J. E. E. Fenton, March 25th; Lt. E. V. Holland, March 30th; Sec. Lt. L. H. Eyres, April 3rd; Sec. Lt. R. Wilkinson, April 13th; Sec. Lt. P. Rockley, April 19th; Lt. R. Kelly (substituted for notification in "Gazette" of Sept. 5th), Sec. Lt. W. A. McLeod, April 20th; Sec. Lt. F. K. Wilson, May 19th; Capt. H. L Hitch, May 28th; Lt. G. E. Ransom, May 31st; Lt. T. F. Burrill, June 13th; Capt. B. A. Smart, D.S.O., June 29th (substituted for notification in "Gazette" of July 4th); Sec. Lt. A. B. Wilkinson, July 6th; Sec. Lt. F. Carroll, Lt. J. A. Chambers, July 12th; Maj. K. L. Caldwell, M.C., D.F.C., Sec. Lt. G. E. Cartwright, July 17th; Lt. C. J. Chabot, July 20th; Lt. E. Lindup, M.C., Aug. 1st; Sec. Lt. W. D. Wood, Aug. 7th; Sec. Lt F. L. Chapin, Lt. E. P. C. Godsil, Aug. 22nd; Sec. Lt. A. R. Wylde, Aug. 27th; Sec. Lt. C. C. Chapman, Lt. F. M. Wood, Aug. 29th, Sec. Lt. E. H. Sansom, Sept. 6th; Sec. Lt. W. G. Harris, Sec. Lt. B. P. Hawkins, Sept. 10th; Lt. R. Lucovich, M.C., Sept. 18th; Lt. C. Jackson, Sept. 19th (substituted for notification in the "Gazette" of Nov. 21st); Sec. Lt. T. M. Harries, D.F.C., Sept 20th; Sec. Lt. I. Fender, Sept. 22nd; Capt. H. L. Wood, Sept 26th; Sec. Lt. W. C. Campain, Sec Lt A. P. Cannon, Lt. F. Carr, Sec. Lt. J. E. Charlebois, Sec. Lt C. Hancock, Sec. Lt. A. J. Lacasse, Sec. Lt. B. C. Longmire (substituted for notification in the "Gazette" of July 22nd), Sept. 28th; Sec. Lt. H. W. P. Carew, Lt. W. J. Carroll, Capt. B. N. Harrop, Sec. Lt. W Haviland, Sec. Lt. J. T. J. McA Nulty, Sec. Lt. E. P. McCarville, Lt. E. C. MacDonnell, Sec. Lt. J. MacDonell, Sec. Lt. J. MacFarlane, Sec. Lt. W H. Young, Sept. 29th; Sec. Lt. J. L. Merrington, Sept. 30th; Lt. J. J. A. Thompson, Oct. 6th; Sec. Lt. (Hon. Lt.) A. Dunton, Lt. K. Y Gliddon, Oct. 9th; Sec. Lt. J Atkinson, Oct. 10th; Sec. Lt. C. F. Lawson, Oct 11th; Maj. H. F Champion, A.F.C., Oct 12th; Lt. E. J. A. Burke, Oct. 13th (substituted for notification in the "Gazette" of Nov. 4th); Sec. Lt. J. W. Davies, Oct 16th; Sec. Lt. G. B Allen, Sec. Lt. R. N. Bullock, Sec. Lt. F. Laughton, Oct. 20th; Sec. Lt. R. B. Stock, Oct. 28th (substituted for the notification in the "Gazette" of Oct. 24th); Sec. Lt. T V. Callard, Oct 29th (substituted for notification in the "Gazette" of Oct. 24th). Lt R Locke, Oct. 30th (substituted for notification in the "Gazette" of Nov 14th, wherein this officer was shown under Technical Branch); Sec. Lt C. F. Robinson, Nov. 1st; Sec Lt. H. P. Lawson, Sec. Lt. R. D. B. Wood, Nov. 2nd; Sec Lt. J. D Bush, Lt. J. B Purefoy, Sec. Lt. J. Withers, Nov 3rd; Sec Lt. (Hon. Lt.) G. G. Ross-Smith (R.G.A.), Nov 4th (substituted for notification in "Gazette," Nov. 14th); Sec. Lt. J. O. E. Carrington, Nov. 7th; Sec. Lt. F. M. Seabourne, Nov. 10th; Lt. C. H. Cameron, Lt. H. F. Lea, Lt. R. F. McRae, Nov. 13th; Lt. P. Phillips, Nov. 22nd; Sec. Lt. S. S. George, Lt. I. A. Romyn, Nov. 23rd; Sec. Lt. (Hon. Lt.) E. H. Colman, Sec. Lt. J. H. Gibbons, Nov. 29th; Lt. K. H. Carr, Nov. 30th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—D. MacGregor (K.O.S.B.) (caused by wounds), Nov. 13th; C. A. Bradnam (contracted on active service), Nov. 22nd; N. W. R. Mawle, D.F.C. (Lond. R., T.F.) (caused by wounds), Nov. 24th; D. G. H. Meade (contracted on active service), Nov. 26th.

The following Sec. Lts. relinquish their commns. on account of ill-health (caused by wounds), and are permitted to retain their rank:—C. Houlgrave, E. J. Norris, Nov. 25th; Sec. Lt. R. J. Barnes resigns his commn., Aug. 26th, 1918.

The surname of Lt. A. H. Ashton is as now described, and not "Ashtch," as stated in "Gazette," Nov. 14th.

The Christian names of Sec. Lt. Henry Dan Lewis are as now described, and not "Henry Van," as stated in "Gazette," Nov. 4th.

The initials of Lt. J. O. Barclay are as now described, and not "J. B.," as stated in "Gazette," Jan. 21st.

The surname of Lt. F. M. McLellan, D.F.C., is as now described, and not "McLennan," as stated in "Gazette," July 22nd.

The notification in "Gazette," Oct. 21st, concerning Sec. Lt. L. T. Lawrence is cancelled. "Gazette," April 18th, to stand.

The notification in "Gazette," April 1st, concerning Sec. Lt. N. H. Howe is cancelled

Administrative Branch.—Flying Officer F. V. Goode to be Flying Officer from (S.O.), Nov. 10th.

Flying Officer (actg. Flight Lt.) W. H. Hoile relinquishes the actg. rank of Flight Lt. on ceasing to be empld. as Flight Lt., Nov. 13th.

Sec. Lt. E. Staples (since demobilised) to be Lt., Nov. 13th, 1918.

Sec. Lt. T. Mumford to be actg. Lt. whilst empld. as Lt., from Aug. 8th, 1918, to April 30th

The following Flying Officers relinquish their temp. R.A.F. commns. on return to Army duty:—G. W. Panter, M.B.E (Lt., R.I. Rif.), Oct. 15th; G. W. Nelson (Lt., Gord. Highrs.), Nov. 6th; T. H. Holmes (Lt., R.F.A.), Nov. 15th; (Hon. Flight Lt.) C. H. Markham (Capt., North'd Fus.), Nov. 19th.

Transferred to the unempld. list:—Sec. Lt. A. J. P. Evans, March 21st; Lt. W. Wallace, M.C., April 15th; Sec. Lt F. Harris, July 18th; Sec. Lt. C. C. Lotter, Aug. 7th; Sec. Lt. A. Gibson, Aug. 27th; Lt. F. R. C. Davidson, Sept. 7th; Lt. S. L. Empson, Capt. L. F. Lambert, Sept. 8th; Lt. E. H. A. Lockwood, Sept. 11th; Capt. F. Steel, O.B.E., Sept. 23rd; Lt. B F. MacDonald, Sept. 26th; Sec. Lt. G F. Carefoot, Sept. 28th; Sec Lt. J D. Grant, Sept. 29th; Lt J W. Mennie, Oct. 18th; Sec. Lt. T. Caine, Oct. 20th; Capt. T L. Williams, M.C., Nov. 13th; Lt. C. S. Chamberlain, Nov. 24th; Lt. A. E. Houghton (Sec. Lt., Extra Regimentally Empld. List) resigns his commn., Dec. 3rd.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—B. W. A. Ordish, G. R. Smith (contracted on active service), Nov. 26th; G. N. Wood, Dec. 7th, 1918 (substituted for notification in the "Gazette" of Aug. 6th, 1918).

The notification in the "Gazette" of March 11th concerning Lt. N. H. Kemp is cancelled.

The notifications in the "Gazettes" of July 9th, 1918, and Dec. 24th, 1918, concerning Sec. Lt. (Hon. Capt) F. Grave are cancelled.

Technical Branch.—F. Grave (Capt. and Qrmr, Ldn. R., T.F.) is granted a temp. commn. as Capt., Grade (B), April 1st, 1918, without the pay and allowances of that rank prior to May 22nd, 1918

Flying Officer J. L. Denman to be Flying Officer from (S.O.), Oct. 18th (substituted for notification in the "Gazette" of Nov. 21st).

Lt. W. L. Head to be Lt., Grade (B), from ("A. and S."), Aug. 9th (substituted for notification in the "Gazette" of Aug. 30th, 1918).

Sec. Lts. to be Lts.:—S A Alder, April 2nd, 1918, without the pay and allowances of that rank prior to Aug. 28th, 1918; V. P. Pereth, June 3rd; E. Downer, June 6th.

Pilot Officers to be Flying Officers:—A. D. Edwards, Aug 5th; E. W. Dawson, A. E. Faver, J. H J. Footman, L. J. Lester, R. Smith, Oct. 1st.

Pilot Officer (actg. Flight Lt.) A. Jukes relinquishes the actg. rank of Flight Lt. on ceasing to be empld. as Flight Lt., from (S.O.), Oct. 18th.

Flying Officer G P. N. Hardy (Lt., R.G.A.) relinquishes his temp. R.A.F. commn. on return to Army duty, Nov. 17th.

Transferred to the unempld. list:—Sec. Lt. B. Jones, Feb. 4th; Sec. Lt. H. B George, July 24th (substituted for notification in the "Gazette" of Sept. 12th); Sec. Lt. (Hon Capt.) T. R. Duff, July 29th; Lt. (Hon. Maj.) A. H. W. Saunders-Knox-Gore, Aug. 9th; Lt. J. W. Cairns, Sept. 12th; Sec. Lt. (Hon. Lt.) J. L. Bicknell, Oct. 6th; Lt. N. D. Bryce, Oct. 9th; Capt A. M. Low, Oct. 14th; Sec. Lt. W. Parkinson, Oct. 28th (substituted for notification in the "Gazette" of Nov. 7th); Sec. Lt. C. M. Byham, Oct. 29th (substituted for notification in the "Gazette" of Oct. 28th); Lt. K. E. Beswick, Nov. 4th (substituted for notification in the "Gazette" of Nov. 18th); Sec. Lt. H. J. Wadkin, Nov. 5th; Sec. Lt. J. W. Tattersall, Nov. 6th; Maj. J. O. James, Nov. 13th; Capt. S. McClure, O.B.E., Nov. 20th; Capt. H. W. Bamber, Capt. A. W. Davie, Nov. 22nd

Lt. H. J. Murphy relinquishes his commn. on account of ill-health contracted on active service, and is granted the rank of Capt., Nov. 26th.

The initial of Sec. Lt. H. Jacques is as now described, and not "U.," as stated in the "Gazette" of Nov. 18th.

The notifications in the "Gazettes" of Feb. 11th, March 18th, May 20th, concerning Lt. (Hon. Capt.) F. Grave are cancelled.

Medical Branch.—Transferred to the unempld. list:—Capt. A. P. Woollright, April 18th; Capt V. T. Ellwood, Nov. 25th.

Capt. H. N. Wright relinquishes his commn on account of ill-health contracted on active service, and is permitted to retain his rank. Nov. 25th.

The initials of Capt. A. Moir-Gray are as now described, and not "Q.," as stated in the "Gazette" of Nov. 14th.

Memoranda.—Pilot Officers to be Flying Officers:—G. H. Brown, W. I. Ryder, Oct. 1st.

The following overseas Cadet is granted a temp. commn as Sec. Lt., with effect from Feb. 15th, and relinquishes his commn with permission to retain his rank from the day following demobilisation:—316124 D. A. Aberdeen.

The following overseas Cadet is granted an hon. commn. as Sec. Lt.:—154907 R. Ingram, Jan. 1st

The following Probationary Flight Officers are granted hon. commns. as Sec. Lts.:—B. C. Oades, Nov. 16th, 1918; E. F. Northey, Dec. 17th, 1918; C. W. D. Outred, Jan. 23rd; R. E. Haswell, Jan. 24th; R. H. Hardman, Feb. 12th; J. G. Heriot, Feb. 13th; C. L. Harrison, Feb. 19th; C. Norris, March 5th; C. L. Marn, March 7th; H E. Mock, March 9th; H. W. Merrill, March 18th; H. S. McLeod, March 10th; L. J. Hartnett, April 2nd; D B. Mincard, April 6th; R. S. Harrison, April 8th; T. E. Hall, April 12th; S B. McBain, April 14th; H. H. Mullens, April 28th; C. Moody, May 2nd; L. G. Hicks, July 24th; D. H. O. Oakley, Sept. 26th.

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The following Cadets are granted hon. commns. as Sec. Lts.:—179188 H. B. T. Curtis, Jan 13th; 182487 F. Jeffery, Jan. 15th; 299061 E. L. Walsh, March 2nd; 11205 H. D. Hoskins, March 20th; 110418 R. G. Veryard, April 22nd (substituted for notification in the "Gazette" of July 25th, wherein this Cadet was described as "110410 Richard Joe Veryard"); M2/204666 C. F. Keate, May 3rd; 152337 G. McNeill, May 6th; 33292 A. R. Quaife, May 29th; M2/102920 A. G. Brayshaw, June 20th; 261591 J. H. R. Nixon, Nov. 8th.

Wing Comdr. M. G. Christie, C.M.G., D.S.O., M.C., is placed on the half-pay list, Dec. 3rd.

Lt.-Col. (actg. Col.) B. H. O. Armstrong, C.M.G. (Maj. (Bt. Lt.-Col.) R.E.), relinquishes his commn. on ceasing to be empld., Nov. 15th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—R. Richardson, H. J. Wilkins, Sept. 16th.

Transferred to the unempld. list:—Capt. J. H. Tyler, M.B.E., from (S.O.), May 2nd (substituted for notification in "Gazette," July 15th, wherein this officer was shown under Flying Branch); Capt. G. S. Lardner, from (S.O.), Oct. 10th.

The notification in "Gazette," July 25th, concerning 177148 Cadet W. McK. Auld is cancelled.

The notification in "Gazette," May 2nd, concerning 27041 Cadet D. Aylam is cancelled.

CENTRAL CHANCERY OF THE ORDERS OF KNIGHTHOOD.

St. James's Palace, S.W.1, Dec. 5th.

The three Warrants set forth below are concerned with the establishment of the Distinguished Flying Cross, the Air Force Cross, the Distinguished Flying Medal and the Air Force Medal, the institution of which was announced in the "London Gazette" of June 3rd, 1918 (No 30723, page 6533):—

Royal Warrant instituting Decorations and Medals for the Royal Air Force.

GEORGE R.I.

George the Fifth, by the Grace of God of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas King, Defender of the Faith, Emperor of India: To all to whom these presents shall come. Greeting!

Whereas We are desirous of signifying Our appreciation of acts of valour, courage, and devotion to duty performed by Officers and Men in Our Air Force and in the Air Forces of Our Self-governing Dominions beyond the Seas, We do hereby, for Us, Our heirs and successors, institute and create two decorations to be designated the Distinguished Flying Cross and the Air Force Cross, and two Medals, to be designated the Distinguished Flying Medal and the Air Force Medal, and We do hereby direct that the following regulations shall be made governing the said Decorations and Medals:—

Firstly. It is ordained that the Distinguished Flying Cross shall be granted only to such Officers and Warrant Officers of Our said Forces as shall be recommended to Us for an act or acts of valour, courage, or devotion to duty performed whilst flying in active operations against the enemy.

Secondly. It is ordained that the Distinguished Flying Cross shall be silver and shall consist of a Cross flory terminated in the horizontal and base bars with bombs, the upper bar terminating with a rose, surmounted by another cross composed of aeroplane propellers charged in the centre with a roundel within a wreath of laurels a rose winged ensigned by an Imperial Crown thereon the letters R.A.F. On the reverse the Royal Cypher above the date 1918. The whole attached to the clasp and ribbon by two sprigs of laurel.

Thirdly. It is ordained that the Distinguished Flying Cross shall be worn on the left breast pendant from a ribbon one inch and a quarter in width, which shall be in colour violet and white in alternate horizontal stripes of one-eighth of an inch in depth.

Fourthly. It is ordained that the award of the Distinguished Flying Cross shall entitle the recipient to have the initials D.F.C. appended to his name.

Fifthly. It is ordained that the Air Force Cross shall be granted only to such Officers and Warrant Officers of Our said Forces as shall be recommended to us for an act or acts of valour, courage, or devotion to duty whilst flying though not in active operations against the enemy.

Sixthly It is ordained that the Air Force Cross shall be silver and shall consist of a thunderbolt in the form of a cross, the arms conjoined by wings, the base bar terminating with a bomb surmounted by another cross composed of aeroplane propellers, the four ends enscribed with the letters G.V.R.I. In the centre a roundel thereon, a representation of Hermes mounted on a hawk in flight bestowing a wreath. On the reverse the Royal Cypher above the date 1918. The whole ensigned by an Imperial Crown and attached to the clasp and ribbon by two sprigs of laurel.

Seventhly. It is ordained that the Air Force Cross shall be worn on the left breast pendant from a ribbon one inch and a quarter in width, which shall be in colour red and white in alternate horizontal stripes of one-eighth of an inch in depth.

Eighthly. It is ordained that the award of the Air Force Cross shall entitle the recipient to have the initials A.F.C. appended to his name.

Ninthly. It is ordained that the Distinguished Flying Medal shall be granted only to such Non-commissioned Officers and Men of Our said Forces as shall be recommended to Us for an act or acts of valour, courage, or devotion to duty performed whilst flying in active operations against the enemy.

Tenthly. It is ordained that the Distinguished Flying Medal shall be silver and oval-shaped, bearing Our Effigy on the obverse and on the reverse within a wreath of laurel a representation of Athena Nike seated on an aeroplane, a hawk rising from her right arm above the words "for Courage." The whole ensigned by a bomb attached to the clasp and ribbon by two wings.

Eleventhly. It is ordained that the Distinguished Flying Medal shall be worn on the left breast pendant from a ribbon of one inch and a quarter in width, which shall be in colour violet and white in alternate horizontal stripes of one-sixteenth of an inch in depth.

Twelfthly. It is ordained that the award of the Distinguished Flying Medal shall entitle the recipient to have the initials D.F.M. appended to his name.

Thirteenthly. It is ordained that the Air Force Medal shall be granted only to such Non-commissioned Officers and Men of Our said Forces as shall be recommended to Us for an act or acts of valour, courage, or devotion to duty performed whilst flying, though not in active operations against the enemy.

Fourteenthly It is ordained that the Air Force Medal shall be silver and oval-shaped, bearing Our Effigy on the obverse and on the reverse within a wreath of laurel a representation of Hermes mounted on a hawk in flight bestowing a wreath. The whole ensigned by a bomb attached to the clasp and ribbon by two wings.

Fifteenthly. It is ordained that the Air Force Medal shall be worn on the left breast pendant from a ribbon one inch and a quarter in width, which shall be in colour red and white in alternate horizontal stripes of one-sixteenth of an inch in depth.

Sixteethly. It is ordained that the award of the Air Force Medal shall entitle the recipient to have the initials A.F.M. appended to his name.

Seventeenthly. It is ordained that Foreign Officers and gradings of an equivalent rank to those above mentioned who have been associated in Military operations with Our Army or Our Indian, Dominion, or Colonial Military Forces, shall be eligible for the award of the Distinguished Flying Cross, the Air Force Cross, the Distinguished Flying Medal, and the Air Force Medal.

Eighteenthly. It is ordained that in cases where Officers, Warrant Officers, and Men who have been awarded one of the above decorations or medals shall be recommended for a further act of valour, courage, or devotion to duty, he shall be awarded a bar to be attached to the ribbon by which the decoration or medal is suspended, and for every additional such Act an additional bar may be awarded.

Nineteenthly. It is ordained that the names of those upon whom We may be pleased to confer the above decorations and medals shall be published in the "London Gazette," and that a Register thereof shall be kept in the Office of Our Secretary of State for the Royal Air Force.

Twentiethly. It is ordained that any person whom by an especial Warrant under Our Royal Sign Manual We declare to have forfeited the above decorations, medals, and bars shall return the same to the Office of Our Secretary of State for the Royal Air Force, and that his name shall be erased from the Register of those upon whom the said decorations, medals, and bars shall have been conferred.

Lastly. We reserve to Ourself, Our heirs and successors, full power of annulling, altering, abrogating, augmenting, interpreting, or dispensing with these regulations, or any part thereof, by a notification under Our Royal Sign Manual.

> Given at Our Court at St. James's under Our Sign Manual this 3rd day of June, in the ninth year of Our Reign and in the year of Our Lord One thousand nine hundred and eighteen.
>
> By the Sovereign's Command, **William Weir.**

Royal Warrant amending the Third, Seventh, Eleventh, and Fifteenth Clauses of the Royal Warrant instituting Decorations and Medals for the Royal Air Force.

GEORGE R.I.

George the Fifth, by the Grace of God of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas King, Defender of the Faith, Emperor of India: To all to whom these presents shall come. Greeting!

Whereas We did, by Royal Warrant under Our Sign Manual dated June 3rd, 1918, institute and create two decorations designated the Distinguished Flying Cross and the Air Force Cross and two Medals designated the Distinguished Flying Medal and the Air Force Medal to be awarded to Officers and Men in Our Air Force and in the Air Forces of Our Self-governing Dominions beyond the Seas in recognition of acts of valour, courage, and devotion to duty.

And whereas We are desirous that certain alterations should be made in the regulations governing the said decorations and medals.

Now, therefore, We do by these Presents for Us, Our Heirs and Successors, ordain that the following Ordinances shall be substituted for the corresponding Ordinances in the said Royal Warrant, and shall henceforth be construed and have the same effect as if they formed part of the said Royal Warrant:—

Thirdly. It is ordained that the Distinguished Flying Cross shall be worn on the left breast pendant from a ribbon one inch and a quarter in width which shall be in colour violet and white in alternate diagonal stripes of one-eighth of an inch in width running at an angle of 45 degrees from left to right.

Seventhly. It is ordained that the Air Force Medal shall be worn on the left breast pendant from a ribbon one inch and a quarter quarter in width which shall be in colour red and white in alternate diagonal stripes of one-eighth of an inch in width running at an angle of 45 degrees from left to right.

Eleventhly. It is ordained that the Distinguished Flying Medal shall be worn on the left breast pendant from a ribbon of one inch and a quarter in width which shall be in colour violet and white in alternate diagonal stripes of one-sixteenth of an inch in width, running at an angle of 45 degrees from left to right.

Fifteenthly. It is ordained that the Air Force Medal shall be worn on the left breast pendant from a ribbon one inch and a quarter in width which shall be in colour red and white in alternate diagonal stripes of one-sixteenth of an inch in width running at an angle of 45 degrees from left to right.

> Given at Our Court at St. James's this 24th day of July, in the tenth year of Our Reign and in the year of Our Lord One thousand nine hundred and nineteen.
>
> W. S. Churchill, by His Majesty's Command.

Royal Warrant enabling the Air Force Cross and Air Force Medal to be conferred upon Civilians.

GEORGE R.I.

George the Fifth, by the Grace of God of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas King, Defender of the Faith, Emperor of India: To all to whom these presents shall come. Greeting!

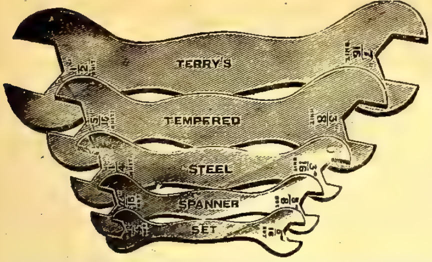
Whereas We did, by Royal Warrant under Our Sign Manual dated June 3rd, 1918, institute and create two decorations designated the Distinguished flying Cross and the Air Force Cross and two Meadls designated the Distinguished Flying Medal and the Air Force Medal to be awarded to Officers and Men in Our Air Force and in the Air Forces of Our Self-governing Dominions beyond the Seas in recognition of acts of valour, courage, and devotion to duty.

And whereas We are desirous that certain alterations should be made in the regulations governing the said decorations and medals.

Now, therefore, We do by these Presents for Us, Our Heirs and Successors, ordain that the following Ordinances shall be substituted for the corresponding Ordinances in the said Royal Warrant, and shall henceforth be construed and have the same effect as if they formed part of the said Royal Warrant:—

Fifthly. It is ordained that the Air Force Cross shall be granted to such Officers and Warrant Officers of Our said Forces as shall be recommended to Us for an act or acts of valour, courage, or devotion to duty whilst flying though not in active operations against the enemy, and may also be granted to individuals not belonging to Our Air Force (whether Naval, Military, or Civil) who render distinguished service to Aviation in actual flying.

Thirteenthly. It is ordained that the Air Force Medal shall be granted to such Non-commissioned Officers and Men of Our said Forces as shall be recommended to Us for an act or acts of valour,



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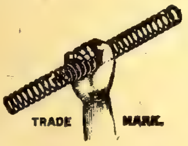

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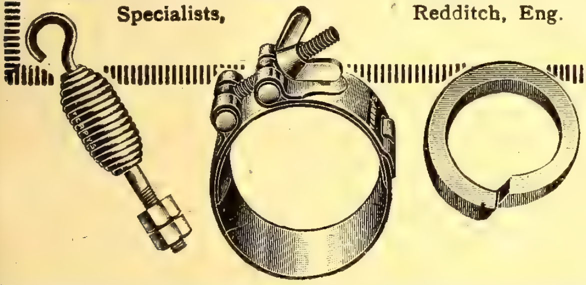

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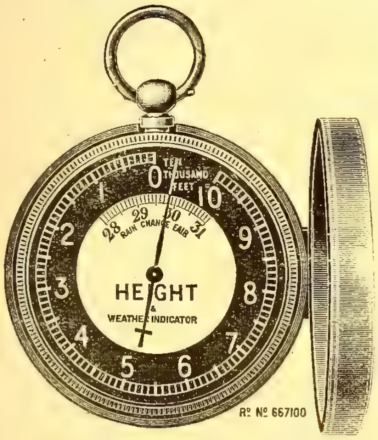

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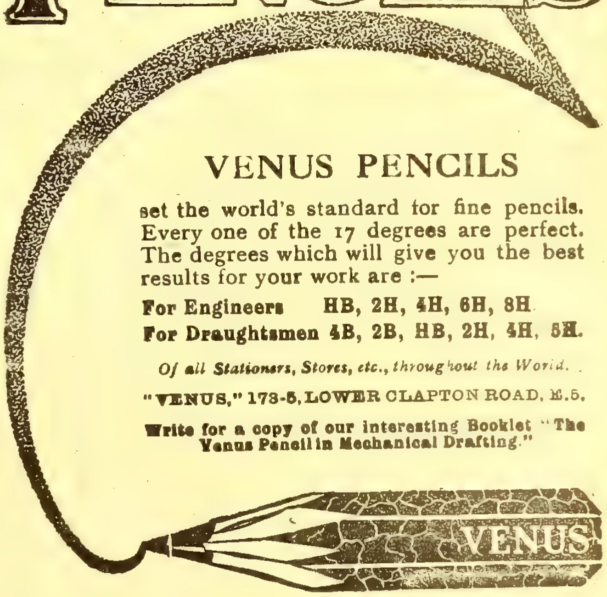

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courage, or devotion to duty performed whilst flying though not in active operations against the enemy, and may also be granted to individuals not belonging to Our Air Force (whether Naval, Military, or Civil) who render distinguished service to Aviation in actual flying.

Given at our Court at Balmoral this 27th day of August, in the tenth year of Our Reign and in the year of Our Lord One thousand nine hundred and nineteen.

W. S. Churchill, by His Majesty's Command.

PERSONAL NOTICES.

NAVAL.

Death.

EASTY.—Sub-Flt. Lieut. Walter Harry Easty, R.N.A.S., who was reported missing on April 22nd, 1918, while on an offensive patrol in the neighbourhood of Aveluy Wood, is now presumed dead. He was the only son of Walter and Lucy Sutton Easty, of 74, Kempe Road, London, N.W.6., and was 26 years of age.

Engagement.

PARRY—BUCKLEY.—The engagement is announced between Engineer Lieut.-Cmdr. Rey Griffith Parry, D.S.O., Royal Navy, acting Major, R.A.F., son of the late W. Griffith Parry, formerly of Grosvenor Lodge, Beckenham, and Belgrano, Buenos Aires, and Joan Brunner Buckley, younger daughter of Major T. W. Buckley, R.A.M.C., Clopton Manor, Thrapston, and of Mrs. Buckley, The Ridge House, St. George's Hill, Weybridge.

Marriage.

COMPSTON—BARCLAY.—On Nov. 25th, at St. Simon's Church, Chelsea, Flt. Lieut. Robert John Orton Compston, D.S.C., D.F.C., R.A.F., was married to Nina Mabel, only child of the late Capt. A. H. Barclay and adopted daughter of Lieut.-Col. H. F. Barclay, 34, Lennox Gardens, by the Rev. H. F. B. Compston, Vicar, Bredwardine, Hereford, Fellow of King's College, London (father of the bridegroom), assisted by the Rev. W. M. Selwyn, Vicar.

MILITARY.

Engagements.

CLARK—COATS.—The engagement has been announced between Capt. C. C. Clark, R.F.A. and R.A.F., youngest son of Mr. Henry Clark and the late Mrs. Clark, of 25, Adelaide Crescent, Brighton, and Katherine, eldest daughter of Mr. and Mrs. P. Herbert Coats, of Corsebar, Paisley.

NOEL—GAIRDNER.—The engagement is announced between Major M. W. Noel, A.F.C., the King's Regiment, attd. R.A.F., son of Colonel Noel, Stardens, Newent, Gloucestershire, and Edith, daughter of Mrs. Charles Gairdner, 88, Westbourne Terrace, Hyde Park.

Marriages.

BIRKETT—WELLS.—On Nov. 25th, at St. Stephen's Church, Ealing, Norman Wreford Birkett, late 6th Bn., The Buffs, and R.A.F., son of Mr. and Mrs. Louis Birkett, of Chislehurst, was married to Kathleen Wells, late W.R.A.F., daughter of Mr. C. W. Wells, of Ealing, by the Rev. H. M. Larner, Rector of Busbridge.

JENKINS—ROBERTSON.—On Nov. 26th, at St. Olaf's Church, Kirkwall, Lieut.-Col. F. Howard Jenkins, O.B.E., M.C. (late R.F.C. and R.A.F.), second son of the late J. H. Jenkins, M.R.C.S., L.R.C.P., of Lytham, Lancashire, was married to Harriet Fernelith, second daughter of Duncan J. Robertson, O.B.E., County Clerk of Orkney, by the Venerable Archdeacon Craven, D.D.

WEBB-BOWEN—HADLEY.—On Nov. 27th, at Christ Church, Chelsea, Air Commodore T. I. Webb-Bowen, R.A.F., late R.F.C., was married to Violet Louise Hadley, elder daughter of Mr. and Mrs. C. A. Hadley, of Johannesburg, S. Africa.

WILSON—ORR-EWING.—Capt. C. B. Wilson, late Xth Royal Hussars, and R.F.C., and Mrs. Hugh Orr-Ewing were married on Saturday, Nov. 22nd, and have left for the Continent.

Births.

GARROD.—On Nov. 13th, at 13, Gainsborough Gardens, Hampstead, to Evelyn, the wife of Squadron Leader A. G. R. Garrod, M.C., D.F.C., R.A.F.—a daughter.

HAWKINS.—On Nov. 24th, at Manor Farm, Sundridge, Kent, the wife of Gordon Hawkins, M.C., late Lieut., Border Regt. and R.A.F., of a son.

HUNTER.—On Nov. 14th, at Birnam, Castle Bromwich, the wife of Capt. A. Hunter, O.B.E., R.A.F. (late R.F.C.), of a son.

MOODY.—On Nov. 21st, at Simla, the wife of Major Francis Hyde Moody, M.C., R.A.F., of a daughter.

AIR FORCE.

Deaths.

BOURNE.—On Nov. 6th, Flying Officer Richard Balfour Bourne, R.A.F., died at Baldonnell Aerodrome, Co. Dublin, as the result of an aeroplane accident. He was 22 years of age, and was the elder son of Mr. and Mrs. Harry H. Bourne, of 82, Addison Way, N.W.4. Mr. Bourne had seen three years' service.

GIBB.—Mrs. J. P. Gibb, wife of Lieut. J. P. Gibb, late R.A.F., died on Nov. 10th at the Cottage Hospital, St. Andrew's.

KEYMER.—Capt. Basil Graham Homfray Keymer, D.F.C., Italian Croce di Guerra, R.A.F., who was killed on Oct. 24th in South Russia, was the eldest son of Rev. Basil N. Keymer, C.T.F., and Mrs. Keymer, of 1, Belvedere Road, Scarborough. He was 20 years of age.

Marriages.

HAMILTON—MITCHELL.—At St. Andrew's Church, Bath, on Dec. 2nd, Lieut. Wallace Ferrier Hamilton, R.A.F., youngest son of Mr. and Mrs. Claude Hamilton, Macedon, Australia, was married to Elsie, daughter of Mr. and Mrs. Ernest Mitchell, of 5, Park Street, Bath, by the Rev. Cecil Wilson, rector of Walcot.

LONG—TARRANT.—On Nov. 29th, at St. Stephen's Church, Gloucester Road, S.W., Flt. Lieut. Alexander James Long, R.A.F., only son of Mr. and Mrs. W. Alexander Long, of 140, Herne Hill, S.E.24, was married to Christine Amy, younger daughter of Mr. S. G. Tarrant, of Great Marlow, Bucks, and the late Mrs. Tarrant, of Tulse Hill, S.W., by the Vicar Lord Victor A. Seymour.

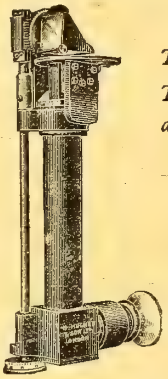
Births.

BLOUNT.—On Nov. 24th, at 28, Cheniston Gardens, W., the wife of Squadron Leader C. H. B. Blount, R.A.F., of a son.

LAIN.—On Nov. 18th, at 5, Cambridge Park, Bristol, to Dorothy, wife of Lieut. F. J. Lain, D.F.C., late R.A.F.—a son.

RICKCORD.—On Nov. 28th, at The Mount, Warlingham, Surrey, the wife of Wing-Commander Percival S. Rickcord, R.A.F., of a son.

The marriage arranged between the Rev. H. McCalman, M.C., R.A.F., and Miss Mildred Rosalie Neale will not take place.



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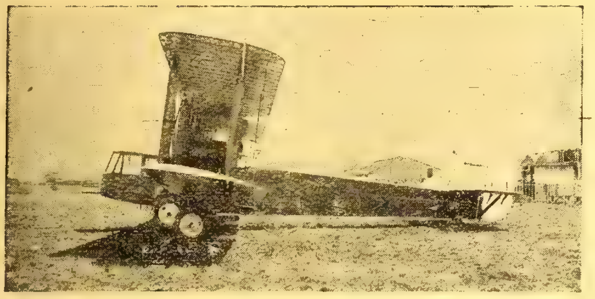

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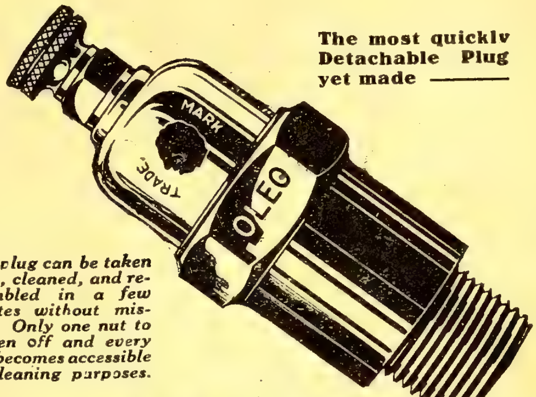

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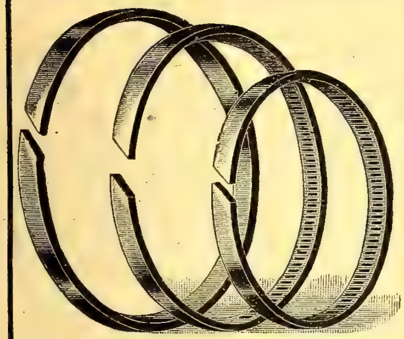

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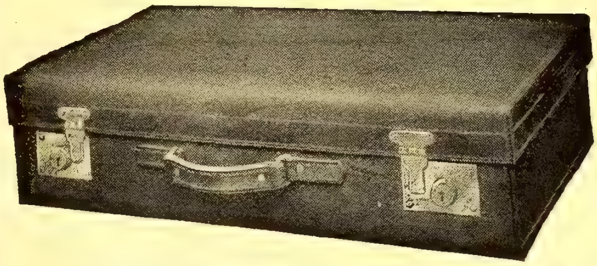

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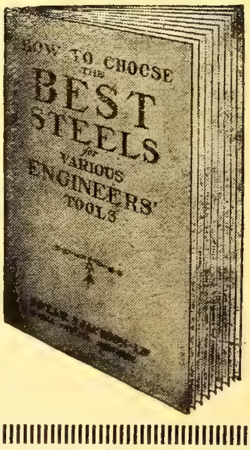

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SPECIAL S.B.A.C. ISSUE

THE AEROPLANE

Edited by C. G. Grey

WEDNESDAY, DEC. 17, 1919.

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DEC. 17, 1919.

THE AEROPLANE

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ON THE BRITISH AIRCRAFT INDUSTRY OF TO-DAY.

AU SUJET DE L'INDUSTRIE DE L'AVIATION BRITANNIQUE.

With typically Gallic energy and initiative the French Aircraft Industry has organised a great Exposition of Aeronautic Matériel at the Grand Palais in Paris. This opens on December 19th, almost exactly eleven years since the first French Aero Show was held in the same magnificent building. The Exposition will remain open till the first week in January, and during the period of the Show naturally the aeronautical interest of the World will be centred on Paris.

One compliments our gallant Allies on their enterprise and, on behalf of all concerned with British Aeronautics, wishes them all the success which they deserve. France led the world in the construction and use of aeroplanes and airships from the beginning of aerial navigation until the outbreak of war. It is right and proper that she should lead in being the first nation to hold a great exhibition at the beginning of the era of Commercial Aeronautics.

British Aircraft Constructors are represented at the Exposition by some of the most famous firms in the Aircraft Industry, to wit the Aircraft Manufacturing Co., Ltd., Boulton and Paul, Ltd., the British and Colonial Aeroplane Co., Ltd. (more familiarly known as the Bristol Co.), Handley Page, Ltd., the Westland Aircraft Works, and Vickers, Ltd. : and on the machines shown by those firms are to be seen the products of some of our leading British manufacturers of engines, such as the Napier, Sunbeam, Rolls-Royce, Siddeley-B.H.P., and Cosmos, and of our leading makers of parts, accessories, and material. But there are very many more members of the British Aircraft Industry who are not represented.

It was the intention of the Society of British Aircraft Constructors to have had a big stand at the Exposition which would represent the British Aircraft Industry as a whole. Unfortunately, as the Society is not itself a manufacturer of aircraft, it was impossible, under the rules of the Exposition, for it to obtain a stand on the ground floor, which is reserved for actual manufacturers. And, as a stand in the Accessory Section would obviously not be consonant with the dignity and importance of the Society, the S.B.A.C. will not appear among the exhibitors.

Why the S.B.A.C. Issues.

Therefore it appears to the management of this paper to be a matter of duty to publish during the period of the Paris Aero Show as complete a review as possible of the British Aircraft Industry and its products, so that manufacturers of British aircraft, aero-engines, parts, accessories, and material may have an opportunity of placing before buyers of aircraft all over the world their claims to consideration.

Avec une énergie et une initiative bien gauloise, l'industrie d'Aviation française a organisé une grande exposition aéronautique au Grand Palais de Paris. Cette exposition s'ouvre le 19 décembre, a peu près exactement onze ans aprés l'ouverture du premier Salon d'aviation dans ce même grandiose batiment. L'Exposition restera ouverte jusqu'à la premiere semaine de Janvier, et naturellement pendant la durée de ce Salon, les intérêts aéronautiques du monde entier seront concentrés sur Paris.

Nous félicitons nos valiants Alliés de leur entreprise, et au nom de tous ceux que concerne l'Aviation britannique, nous leur souhaitons tout le succès qu'ils méritent.

La France a guidé le monde dans la construction et l'emploi d'avions depuis le commencement de l'ère aérienne jusqu'a la déclaration de la guerre. Il est juste qu'elle soit la première nation á ouvrir une exposition au commencement de l'ère aéronautique commerciale.

Les constructeurs d'avions britanniques sont représentés à l'exposition par certaines des plus fameuses firmes de l'industrie d'aviation, telles que—The Aircraft Manufacturing Co., Ltd., Boulton and Paul, Ltd., The British and Colonial Aeroplane Co., Ltd. (plus généralement connue sous le nom de The Bristol Co.), Handley Page, Ltd., The Westland Aircraft Works, et Vickers, Ltd., et les machines exposées par ces firmes représentent les produits de certains de nos fabricants britanniques de Moteurs, tels que Rolls-Royce, Napier, B.H.P., Sunbeam, et Cosmos, ainsi que de nos principaux fabricants d'accessoires et de matériel. Mais il y a un grand nombre de Membres de l'Industrie d'Aviation Britannique qui ne sont pas représentés.

La "Society of British Aircraft Constructors" avait l'intention d'ouvrir dans l'exposition un département qui représenterait l'industrie d'aviation britannique en bloc. Malheureusement la dite Société n'étant pas elle même constructeurs d'avions, il lui a été impossible, vu les règlements de l'exposition, d'obtenir un département au rez-de-chaussée, qui est réserve aux fabricants mêmes. Et, comme il est évident qu'un comptoir dans la Section des Accessoirs n'eut pas été en rapport avec la dignité et l'importance de la Société, la S.B.A.C. ne prendra pas place parmi les exposants.

La Raison d'etre des editions S.B.A.C.

Pour cette raison la direction de ce journal le considère un devoir de publier pendant la durée du Salon d'Aéronautique, une revue aussi complète que possible de l'Industrie d'Aviation britannique et de ses produits, de façon que les Constructeurs d'avions britanniques, aéromoteurs, parties, accessoirs et matériel aient l'occasion de soumettre leurs produits aux acheteurs d'avions du monde entier.

The Paris Show will provide a great advertisement for the French Industry. It is the endeavour of The Aeroplane to provide as great an advertisement as possible for the British Industry, so that in the friendly rivalry of Commerce the British Aircraft Constructor may compete with his French competitor.

Foreign Buyers.

There is no doubt that many hundreds of thousands of visitors will enter the Grand Palais during the next three weeks. Many thousands of them will be passengers in aircraft during the next year or so. But only a few will be buyers of aircraft actually during the Show.

The real buyers of aircraft are the Military, Naval, and Postal authorities of various foreign nations, a certain number of business houses, and a certain number of new firms formed for the purpose of carrying passengers in aircraft, either for pleasure or for transport from place to place. Arrangements have been made that these Special British Aircraft Constructors' Issues of The Aeroplane shall reach such buyers in their own countries. Moreover, the attention of the Military, Naval, and Commercial attachés at the various embassies and legations in Paris and London will be similarly attracted to British aircraft by these issues. And those who wish to buy The Aeroplane in Paris will be able to do so.

Thus it is hoped to provide British Aircraft Constructors with an effective substitute for representation at the Paris Show.

The Industry's Opportunity.

All Members of the Society of British Aircraft Constructors and all Associate Members have been asked to supply information concerning their products for publication in these issues. And in order to be perfectly fair, firms who are not members of the S.B.A.C. have had the opportunity of supplying similar information, though, be it said, all aeroplane and engine firms of importance are in fact members of the S.B.A.C.

The information published in this and the two following issues is, therefore, what has been supplied by the firms themselves, merely edited or rewritten to make it uniform in style with the rest. If the information concerning some firms is meagre, it is because little information has been received. If the information concerning others is particularly comprehensive, it is because those firms have grasped the opportunity offered to them.

The amount of information thus obtained was too great to put into one issue of The Aeroplane, and so it has been divided among three issues. Moreover, it has been considered advisable to sustain the interest in the British Aircraft Industry throughout the duration of the Paris Show, rather than to cause one big splash and then let the interest subside. The information concerning the various firms has, therefore, been published in the order in which it has been received.

Deserters from the Industry.

Though it was to be expected that many firms who built aircraft or aircraft parts during the war would cease to do so when war ended, and though many small firms formed solely to make aircraft parts have naturally dissolved now that there is no more work for them to do, one confesses to a feeling of disappointment that so many big manufacturing concerns who made hundreds of thousands of pounds out of building aircraft during the war—in some cases one suspects millions of pounds—should now state that they have entirely lost interest in aircraft.

Le Salon de Paris constituera une grande réclame pour l'industrie française. The Aeroplane veut s'efforcer de produire une aussi grande réclame que possible pour l'industrie britannique, de sorte que dans la rivalité amicale du Commerce, le Constructeur d'avions britannique puisse rivaliser avec son concurrent français.

Acheteurs Etrangers.

Il est évident que des centaines de milliers de visiteurs se rendront au Grand Palais pendant les trois prochaines semaines. Des milliers d'entre-eux seront passagers en avions dans le courant de l'année. Mais un petit nombre seulement seront réellement acheteurs d'avions pendant la durée du Salon.

Les véritables acheteurs d'avions sont les autorités militaires, navales et postales de différentes nations étrangères, un certain nombre de maisons de commerce, et un certain nombre de nouvelles firmes formées dans le but de transporter les passagers par service aérien, soit pour leur plaisir soit comme moyen de communication. Des arrangements spéciaux ont été pris pour que ces éditions spéciales de The Aeroplane parviennent aux dits acheteurs dans leur propre pays. De plus, l'attention des Attachés militaires, navals et commerciaux aux différentes ambassades et légations de Paris et de Londres, sera attirée de la même manière sur l'aviation britannique par ces éditions. The Aeroplane sera en vente a Paris pour tout ceux qui désirent se le procurer.

Ainsi, on espère donner de la sorte aux constructeurs d'avions britanniques un substituant efficace pour la représentation au Salon de Paris.

Une Occasion pour l'Industrie.

Tous les membres de la "Society of British Aircraft Constructors" et tous les Membres Associés ont été requis de fournir des informations concerant leurs produits, dans le but de les publier dans ces éditions. Et afin d'agir avec justice, les firmes qui ne sont pas membres de la S.B.A.C. ont eu l'occasion de fournir des informations similaires, bien que nous ferons remarquer que toutes les firmes importantes d'avions et de moteurs sont en fait membres de la S.B.A.C.

Les informations que nous publions dans cette édition et dans les deux suivantes sont celles qui nous ont été données par les firmes elles-mêmes, editées ou ré-écrites uniquement pour leur donner un style uniforme et en rapport avec le reste. Si les informations concernant certaines firmes paraissent moindres, c'est que peu d'informations nous ont été fournies. Si d'autre part les détails concernant certaines firmes sont plus étendus, c'est que ces firmes ont fait bon usage de l'occasion qui leur est offerte.

Le total des informations ainsi obtenues étant trop considérable pour paraitre dans une seule edition de The Aeroplane, il a été divisé en trois editions. De plus, il a été considéré plus avantageux de maintenir un intérêt dans l'industrie d'aviation britannique pendant toute la durée du Salon, que de produire un article sensationel et de laisser ensuite s'éteindre l'intérêt. En vue de cet arrangement les informations sont publiées dans l'ordre dans lequel elles ont été recues.

Deserteurs de l'Industrie.

On devait s'attendre a ce que bien des firmes constructeurs d'avions et de parties d'avions pendant la guerre cesserait de travailler après la guerre, et que des firmes moins importantes formées uniquement pour fabriquer des parties d'avions seraient naturellement forcées a dissolution. Cependant on ne peut s'empêcher d'exprimer un sentiment de désappointment lorsqu'on se rend compte que tant de fabriques qui ont réalisé des milliers de livres sterling par la construction d'avions pendant la guerre—dans certains cas il s'agit de millions—déclarent maintenant avoir perdu tout intérêt dans le sujet aviation.

Such firms made their money easily out of designs provided for them by the pioneers of aviation, who paid in blood and tears for the knowledge which produced those designs. Such firms spent their war profits, for which the lives of our aviators paid, in laying down elaborate machinery and setting up luxurious buildings for their staffs and workpeople who stayed away from the war, whereby they hope to make further huge profits in the future.

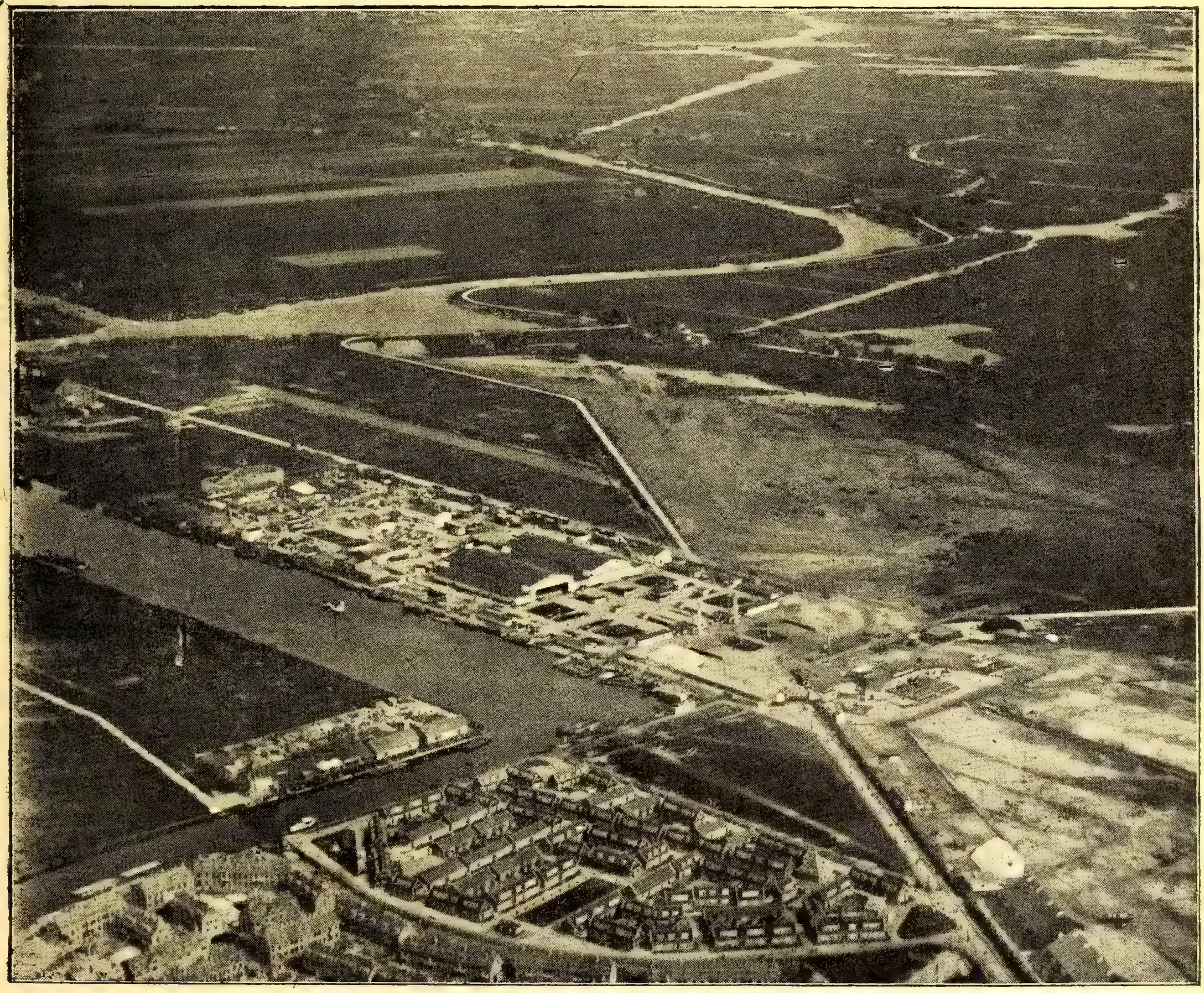
One would rather have expected that as a matter of honour such firms would have set aside a small part of their works and would have retained a small and efficient staff for experimental work on aircraft, so that they might thus help to improve the breed of British aircraft and so help to maintain the Command of the Air on which they, in common with the rest of the British Empire, must depend for their existence in the future.

Their desertion of the British Aircraft Industry is "not cricket." Indeed it is not even commercial common sense, for when, as will inevitably occur in due course, they want to get back into aircraft work when the next boom in aviation occurs, they will find their path beset with thorns. They will have lost their reputation as Aircraft Constructors, which they have acquired at some cost. They will have lost their experienced staffs. And they will have lost the good will of those who can do most to cause them to be accepted as aircraft producers worthy of consideration.

De telles firmes ont fait leur fortune avec facilité en employant les dessins que leur ont fournis les pioniers de l'aviation, dessins que ces derniers ont obtenus au prix de leur sang bien souvent. Ces mêmes firmes ont employé leurs profits de guerre, que nos aviateurs ont payés de leur vie, à ériger des machines perfectionnées et à construire des bâtiments luxueux pour leurs employés et leurs ouvriers qui n'ont pas pris part à la guerre, ces firmes espérant ainsi réaliser encore de grands bénéfices à l'avenir.

On se serait attendu à ce que de telles firmes le considèrent un point d'honneur de maintenir une petite partie de leurs installations et quelques employés efficaces pour faire des travaux d'expérimentation en aviation, aidant ainsi a maintenir la suprématie de l'air dont elles, comme le reste de l'Empire Britannique, dépendent pour leur existence future.

Leur désertion n'est pas honorable. Au fait elle ne prouve même pas un bon-sens commercial, car lorsqu'elles voudront reprendre leur place dans les travaux d'aviation ce qui se produira inévitablement, lors du prochain grand mouvement dans les forces de l'air, elles se trouveront face à face avec de grandes difficultés. Elles auront perdu leur réputation comme constructeurs d'avions qui doit leur avoir couté un certain capital. Elles auront perdu leur employés capables. Elles se seront aliéné le bon vouloir de ceux qui sont le mieux placés pour user de leur influence à les faire admettre comme constructeurs d'avions dignes de considération.



THE FIRST POST-BELLUM EXPOSITION.—The E.L.T.A. at Amsterdam as seen from above. The end of the aerodrome, with sheds, is seen in the right-hand bottom corner, and the Exhibition buildings are in the centre of the picture. The top of the picture gives a good idea of the country over which one has to fly to Holland.

The Constructors of British Aircraft.

The pre-war aeroplane firms courageously remain in the Aircraft Industry to a man. The Aircraft, Avro, Bristol, Blackburn, Caudron, Eastbourne, Grahame-White, Martinsyde, Handley Page, Short, Sopwith, Supermarine, and Vickers Companies are all keeping their works employed on aeroplanes, though all of them are taking up other work so as to make their factories pay their way till aviation again becomes a business proposition.

In addition to them the war has added other important firms to the aeroplane side of the Aircraft Industry. There are the Austin, Alliance, Beardmore, Boulton and Paul, British Aerial Transport, Central Aircraft, Fairey, Gosport Aircraft, Mann and Egerton, Nieuport and General, S. E. Saunders, and Westland Companies, all of whom took up aeroplane making during the war and intend to keep on making aeroplanes, either to order or purely experimentally, unless compelled to desist by force of circumstances. It is encouraging to find that there is faith in the future of aviation among so many firms of good standing.

Equally encouraging is the accession to the Aircraft Industry since the war of the new firm of George Parnall and Co., recently formed by Mr. George Parnall to carry on the aeroplane department of Parnall and Sons. Such practical demonstration of a belief in aviation deserves special recognition.

The Position of the British Aircraft Industry.

When the demand for commercial aircraft does arise, as it will do in due time, the British Aircraft Industry is probably better equipped to meet it than is any other.

The American Industry, though plentifully provided with men and machinery, is lamentably lacking in competent or experienced designers, and it will take years of experience before American aeroplanes can touch their British competitors for safety or efficiency.

The French Industry has certain designers of high genius, and its factories are well equipped. Also its workmen are clever and enthusiastic. But, if one judges by the aeroplanes produced in France during the war, the British Industry can provide several successful designs for every one of approximately equal performance in France. Moreover, for a good all-round level in reliability of construction and quality of workmanship the average British machine can beat the average French machine.

The German Industry is a dangerous competitor, for the German can produce cheaply and quickly. Also his aerodynamic designs are particularly good and his machines fly well. But his detail construction is frequently poor, and many of his machines are lacking in strength. Nevertheless, the German is very painstaking, and removes defects when he discovers them. Therefore the British Industry must guard carefully against German competition.

The Italian Industry is notable for the beauty of its design and its highly finished workmanship. But for the comparatively small number of constructors in Italy that country would be a very dangerous competitor. Even as it is, Italy will sell many aeroplanes and engines to other countries.

In spite of all this competition British workmanship and design is well able to bear comparison with that of any other country, and so the British Aircraft Industry should still hold the first place in the estimation of the world, provided that British Aircraft Constructors pursue a bold and active commercial policy.—C. G. G.

Les Constructeurs d'Avions Britanniques.

Les constructeurs d'avions d'avant guerre se maintiennent courageusement, sans exception, dans l'industrie de l'aviation. The Aircraft, Avro, Bristol, Blackburn, Caudron, Eastbourne, Grahame-White, Martinsyde, Handley Page, Short, Sopwith, Supermarine et Vickers toutes ces compagnies continuent à s'occuper de la fabrication d'aéroplanes, tout en entreprenant d'autres travaux pour continuer leur commerce en attendant que l'aviation devienne une fois de plus une affaire commerciale.

En plus des firmes citées ci-dessus, la guerre a donné d'autres firmes importantes a l'industrie de l'Air. Les Austin, Alliance, Beardmore, Boulton and Paul, British Aerial Transport, Central Aircraft, Fairey, Gosport Aircraft, Mann Egerton, Nieuport and General, S. E. Saunders, et Westland, toutes ces compagnies ont entrepris la construction d'avions pendant la guerre et se proposent de continuer à construire des avions, soit sur commande, soit comme expérimentation, à moins qu'elles ne soient forcées d'y renoncer par suite de circomstances imprévues. Il est encouragement de trouver une foi sincère dans l'avenir de l'aviation parmi tant de firmes si respectables.

Egalement encourageante est l'entrés dans l'industrie de l'aviation depuis la guerre, de la nouvelle firme George Parnall & Co. récemment formée par Mr. George Parnall pour continuer le département d'aéroplanes de Parnall & Sons. Une telle démonstration de foi dans l'aviation mérite une mention spéciale.

La Position de l'Industrie Britannique d'Aviation.

Lorsque se présentera la grande demande pour avions commerciaux, ce qui se fera en temps opportun, l'industrie d'aviation britannique sera probablement mieux équippée pour y répondre que ne l'est tout autre.

L'industrie américaine, bien que largement pourvue d'hommes et de machines, manquent lamentablement de dessinateurs compétents et expérimentés. Il faudra des années d'expérience à l'Amerique avant que ses avions puissent se comparer avec leurs concurrents anglais dans le domaine de la sureté et de l'efficacité.

L'industrie française possède certains dessinateurs de grand génie. Ses usines sont bien équippées. Ses ouvriers sont capables et enthusiastes. Mais, à en juger par les avions construits en France pendant la guerre, l'industrie britannique peut produire plusieurs dessins satisfaisants pour chaque dessin correspondant français. De plus une appareil anglaise moyenne le remporte en stabilité de construction et en qualité de main d'oeuvre sur une appareil française moyenne.

L'industrie allemande est un concurrent dangereux, car les allemands produisent facilement et à bon marché. De plus leurs dessins aérodynamiques sont spécialement bons et leurs machines volent bien. Mais le détail de leur construction est souvent faible et un grand nombre de leur machines manquent de résistance. Néanmoins l'Allemand est un travailleur acharné et corrige ses défauts lorsqu'il les découvre. Il est donc nécessaire que l'industrie britannique se pare prudemment contre la concurrence allemande.

L'industrie italienne est remarquable pour la beauté de ses dessins et le fini de sa main d'oeuvre. Sauf le nombre comparativement réduit de ses constructeurs, l'Italie serait un concurrent très dangereux. Tel que, l'Italie vendra bon nombre d'aéroplanes et de moteurs à d'autres pays.

En dépit de toute cette concurrence, la main d'oeuvre et le dessin britannique peut se mesurer avec ces mêmes facteurs dans d'autres pays, et l'industrie britannique de l'aviation peut maintenir le premier rang dans l'estime du monde entier, à condition que les constructeurs britanniques poursuivent une politique commerciale à la fois hardie et active.—C. G. G.

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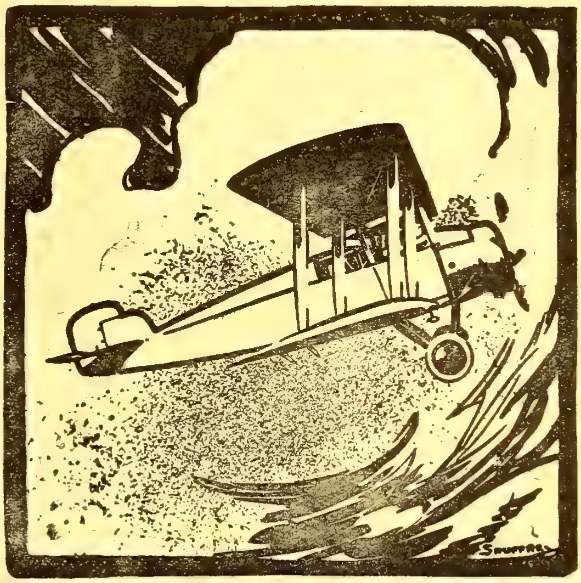

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THE FUTURE OF THE ROYAL AIR FORCE.

On December 13th, which may well be regarded as a lucky day by Service aviators of the future, there was issued a Memorandum by Air Marshal Sir Hugh Trenchard, Chief of the Air Staff, outlining the permanent organisation of the Royal Air Force. To the Memorandum is prefixed a note by Mr. Winston Churchill, Secretary of State for Air, stating that the scheme was prepared under his directions, and has been approved in principle by the Cabinet.

Neither the Memorandum nor the Note call for any particular comment. Both Mr. Churchill and Sir Hugh Trenchard have the welfare of the R.A.F. sincerely at heart, and there are no others so competent to lay down on sound foundations the organisation of our Flying Services. Nor are there any others in whom the officers and men of the R.A.F. have so much confidence. Consequently there will be a very general feeling throughout the Air Force that what is to be done is the best that can possibly be done with the money allowed for the purpose.

The proposal which will be of the greatest interest is that according to which the main portion of the Air Service will consist of an Independent Force, while a small part of the personnel will be specially trained for work with the Navy and a small part specially trained to work with the Army, "these two small portions probably becoming in the future an arm of the older Services."

Prophecies of the Past.

It will be remembered by all regular readers of The Aeroplane that this arrangement is precisely that which was advocated by this paper—and by this paper alone among the whole of the Press—when the single Air Force was first proposed during the agitations of 1916.

One has argued persistently that a Naval aviator is properly a Naval officer who flies and that an Army aviator is properly a soldier who flies, but that there are various uses for aeroplanes in war apart from the strategy of the Navy and Army, and so there is use for an Independent Air Force. Naturally, therefore, one feels gratified to find that the same view is held by Mr. Churchill and Sir Hugh Trenchard.

There is a solid satisfaction in seeing the official action of the two men who truly understand air war in its proper relation to war on sea and land putting into concrete form theories for which one has been abused and derided for the last four years by all the politicians and writers who fancy themselves as authorities on aviation, and by a number of R.A.F. officers who thought that they saw for themselves opportunities for advancement in a separate Air Service which were obviously not open to them in the Senior Services. Perhaps one may be forgiven once more for saying, not for the first time, "I told you so."

The Benefits of Separation.

The segregation of the Naval branch of the Air Service is wholly excellent. One hopes that ultimately it will remove from the Air Force some of those Naval officers who, having been proved useless to the Navy, managed to foist themselves onto the R.N.A.S. and so came into the R.A.F. automatically. There is now an unexpected opportunity of returning them with thanks to the Navy, where they will doubtless again find themselves, in the expressive Naval phrase, "on the beach."

When once they have gone, the R.A.F. will be able to organise its administration and its staff-work on proper lines, and may become an efficient service like the Army. The purely Army side of the Air Service will be the better for being an integral part of the Army, and in friendly competition with this new R.F.C. (one hopes to see the old honourable name and badges revived) the Royal Air Force will develop into a worthy part of the King's Armed Forces.—C. G. G.

THE MEMORANDUM.

Sir Hugh Trenchard's Memorandum reads as follows :—

AN OUTLINE OF THE SCHEME FOR THE PERMANENT ORGANISATION OF THE ROYAL AIR FORCE.

Note by the Secretary of State for Air.

The scheme outlined in the following memorandum on the permanent organisation of the Royal Air Force has been prepared during the course of the present year under my directions by the Chief of the Air Staff, and has in principle received the approval of the Cabinet.

The many complications of the Air Service and its intricate technical organisation are not perhaps fully appreciated, even by those who take a general interest in the subject. It therefore appears desirable to lay this memorandum in both Houses of Parliament, in order that they may understand the character of the problem and the complications that are being faced.

It should be added that the financial provision which the Cabinet have approved as governing the scale of the Royal Air Force during the next few years is approximately 15 million pounds per annum. It is upon this basis that this scheme has been prepared, and it is upon this basis that it is hoped the Estimates of next year will, apart from any extraordinary expenditure which the military situation may render necessary, be framed. Winston S. Churchill.

Dec. 11th, 1919.

MEMORANDUM BY THE CHIEF OF THE AIR STAFF.

1. **The Problem confronting Us.**—The problem of forming the Royal Air Force on a peace basis differs in many essentials from that which confronts the older services. The Royal Air Force was formed by the amalgamation of the Royal Flying Corps and the Royal Naval Air Service, and one may say, broadly speaking, that the whole Service was practically a war creation on a temporary basis, without any possibility of taking into account that it was going to remain on a permanent basis. The personnel with few exceptions was enlisted for the duration of the war, and put through an intensive but necessarily hurried course of training. Material was created in vast quantities, but rapid development often rendered it obsolete almost before it had reached the stage of bulk production. The accommodation provided had perforce to be of an entirely temporary character. The force may in fact be compared to the prophet Jonah's gourd. The necessities of war created it in a night, but the economies of peace have to a large extent caused it to wither in a day, and we are now faced with the necessity of replacing it with a plant of deeper root. As in nature, however, decay fosters growth, and the new plant has a fruitful soil from which to spring.

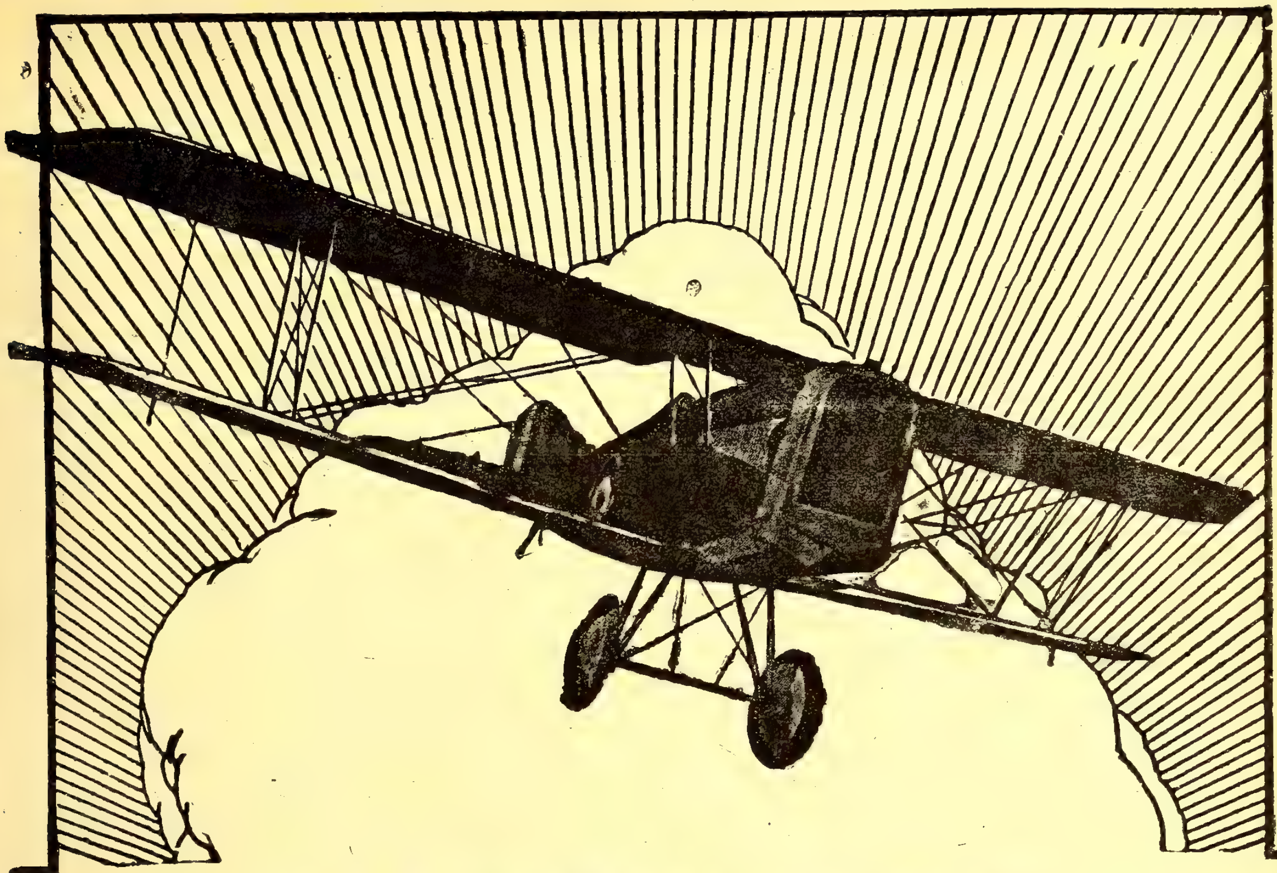
The principle to be kept in mind in forming the framework of the Air Service is that in the future the main portion of it will consist of an Independent Force, together with Service personnel required in carrying out Aeronautical Research.

In addition there will be a small part of it specially trained for work with the Navy, and a small part specially trained for work with the Army, these two small portions probably becoming, in the future, an arm of the older services.

It may be that the main portion, the Independent Air Force, will grow larger and larger, and become more and more the predominating factor in all types of warfare.

2. **Governing Principles.**—In planning the formation of the peace Royal Air Force it has been assumed that no need will arise for some years at least for anything in the nature of general mobilisation. It has been possible therefore to concentrate attention on providing for the needs of the moment as far as they can be foreseen and on laying the foundations of a highly-trained and efficient force which, though not capable of expansion in its present form, can be made so without any drastic alteration should necessity arise in years to come. Broadly speaking, the principle has been to reduce service squadrons to the minimum considered essential for our garrisons overseas with a very small number in the United Kingdom as a reserve, and to concentrate the whole of the remainder of our resources on perfecting the training of officers and men.

It is intended to preserve the numbers of some of the great squadrons who have made names for themselves during the war, in permanent service units with definite identity, which will be the homes of the officers belonging to them, and will have the traditions of the war to look back upon.



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There will be found in the Appendix a statement showing detailed particulars of squadrons, stations, schools, depots, &c., which it is hoped to provide in the next three years at home and abroad. It will be understood that this programme is to be regarded as provisional only.

3. **Service Units.**—It is proposed to provide 8 squadrons for India and 3 for Mesopotamia, with the necessary facilities for repair. As regards India this is in accordance with a proposal put forward from India and now under consideration by the Government of India. The cost of the units in India will fall on the Government of India on exactly the same basis as in the case of the military garrison. Recent events have shown the value of aircraft in dealing with frontier troubles, and it is not perhaps too much to hope that before long it may prove possible to regard the Royal Air Force units not as an addition to the military garrison but as a substitute for part of it. One great advantage of aircraft in the class of warfare approximating to police work is their power of acting at once. Aircraft can visit the scene of incipient unrest within a comparatively few hours of the receipt of news. To organise a military expedition even on a small scale takes time, and delay may result in the trouble spreading. The cost is also much greater, and very many more lives are involved.

In Egypt it is proposed to station 7 service squadrons. Under existing conditions in that country aircraft are a most valuable means of communication. Distances are long and ground communication confined to a few main routes. On the other hand the country and the climate are both ideal for flying. From a wider aspect Egypt is the Clapham Junction of the air between east and west, and is situated within comparatively easy reach of the most probable centres of unrest, and this added to its natural advantages for aviation, makes it the obvious locality for a small Royal Air Force reserve.

As regards our Naval bases and important coaling stations overseas, future developments will almost certainly lead to the necessity of providing aircraft as part of their garrisons, but in the majority of cases the need of this is not urgent under existing conditions, and for the present it is only proposed to station a small seaplane unit at Malta, and a similar unit in the Eastern Mediterranean, probably at Alexandria.

The Service squadrons quartered in the United Kingdom apart from those for co-operation with the Army and Navy will eventually number four, but not more than two of these squadrons will be formed in the next financial year. These squadrons will be employed on communication and similar duties in peace and will form a small reserve in case of need. For co-operation with the Army it is proposed to provide eventually squadrons on the basis of a flight per division for work with the troops at all stages of their training, and in addition one or more squadrons for co-operation with the artillery both during their winter training and their annual gun practice. During the next financial year it is proposed to form two squadrons in all, one at Farnborough for cooperation with the troops at Aldershot and Salisbury, and the second at Stonehenge for work with the artillery. Small units will, if necessary, be provided in addition for co-operation with the Garrison Artillery School at Golden Hill, and the Anti-aircraft School when formed.

There remain the Service squadrons for co-operation with the Fleet. It is proposed eventually to provide at home three Aeroplane squadrons and two Seaplane squadrons. To secure economy and to give the units a corporate existence and ample facilities for practice it has been decided that aeroplanes will no longer be carried normally in capital ships as was done during the war, but will only be embarked when required to take part in Fleet exercises. The Aeroplane squadrons will consist of one reconnaissance and spotting squadron, one squadron of fighter machines and one of torpedo-carrying machines. The two former will be based on the Firth of Forth where ample facilities exist for practice and for the embarkation and disembarkation of machines, a most important point. The torpedo-carrying squadron will be located at Gosport, the most suitable station for torpedo work, and it is proposed to provide a small experimental unit at the same station in order to develop fully this form of co-operation with the Navy, which is of primary importance. Of these three squadrons it is only proposed to provide one, the reconnaissance squadron, at full strength in the ensuing financial year. This is necessary in order to study and perfect the system of observation of artillery fire which from various causes was not so highly developed on the naval side as on the land side during the war. The torpedo squadron will be maintained at sufficient strength to carry on the essential research work while the fighting squadron will be formed in the first instance at a strength of one flight only. In addition, the Admiralty propose to keep two aircraft carriers in commission. One of these will be equipped with seaplanes for service abroad, while the other will remain at home and be used primarily for training and experimental purposes and ready if necessary to embark a flight of torpedo or other machines.

The provision of these two carriers is of the first importance since we must look forward to the time, as suitable machines develop, when fleets will so to speak take their aerodromes with them in the shape of a carrier, and the carriage of aircraft on capital ships with its attendant disadvantages and dangers will be a thing of the past.

Of the two seaplane squadrons, it is only proposed at present to form one flight only. The seaplane has obvious advantages over the aeroplane for long distance work over water, and a time may probably come when all work in cooperation with the Navy will be done by this class of machine. For this reason, if for no other, it is essential to have a few such units.

The lighter-than-air service is a difficult problem. The cost of providing such a service on a large scale in peace is prohibitive, and the use of airships in war may be said to be still in the experimental stage. It is proposed therefore to keep one airship station only, namely Howden, where sufficient accommodation exists for two rigid and a few smaller ships, and to retain as a commencement one rigid and two non-rigids only. This will allow research work and development to continue, and the use of airships in peace and war to be further studied.

4. **Reserves.**—Although modilisation on a large scale is not taken into account, it is very necessary to provide a small reserve to meet any sudden call in the case of a small war anywhere in the Empire. For the next year or two there will, doubtless, be no difficulty in enrolling as many ex-officers and men as are likely to be required, and all that will be necessary will be to provide facilities for their training and practice flying.

It is intended, however, if possible, in addition to lay the foundation of a future Air Force on a territorial basis. No detailed scheme has yet been worked out, but it is probable that the eventual organisation will provide for training both on a unit and on an individual basis. It is hoped that the manufacturing and commercial firms will assist by forming units of their employees. In addition there will doubtless be many individuals who will be glad to train themselves voluntarily with a certain amount of State assistance, and to undertake to serve, either overseas or at home, if called upon to do so. It is not intended to embark on the formation of any units during the next financial year, but it is proposed to commence with the training of individuals in the populous centres. This training will be carried out at the flying training wings whose functions will be described below.

5. **Extreme Importance of Training.**—We now come to that on which the whole future of the Royal Air Force depends, namely, the training of its officers and men. The present need is not, under existing conditions, the creation of the full number of squadrons we may eventually require to meet strategical needs, but it is first and foremost the making of a sound framework on which to build a service, which while giving us now the few essential service squadrons, adequately trained and equipped, will be capable of producing whatever time may show to be necessary in future.

Before explaining our proposals in details it is necessary to lay down certain postulates.

Firstly, to make an Air Force worthy of the name, we must create an Air Force spirit, or rather foster this spirit which undoubtedly existed in a high degree during the war, by every means in our power. Suggestions have been made that we should rely on the older services to train our cadets and Staff officers. To do so would make the creation of an Air Force spirit an impossibility apart from the practical objection, among others, that the existing naval and military cadet and staff colleges are not provided with aerodromes or situated in localities in any way suited for flying training.

Secondly, we must use every endeavour to eliminate flying accidents, both during training and subsequently. This end can only be secured by ensuring that the training of our mechanics in the multiplicity of trades necessitated by a highly technical service, is as thorough as it can be made. The best way to do this is to enlist the bulk of our skilled ranks as boys and train them ourselves This has the added advantage that it will undoubtedly foster the Air Force spirit on which so much depends.

Thirdly, it is not sufficient to make the Air Force officer a chauffeur and nothing more.

Technical experts are required for the development of the science of aeronautics, still in its infancy. Navigation, meteorology, photography and wireless are primary necessities if the Air Force is to be more than a means of conveyance, and the first two are requisite for safety, even on the chauffeur basis.

6. **Training of Officers.**—It is now necessary to sketch very briefly the training proposed for both officers and men.

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Owing to the necessity for a large number of officers in the junior ranks, and to the comparative paucity of higher appointments, it is not possible to offer a career to all. Consequently some 50 per cent. only of the officers have been granted permanent commissions, the remainder being obtained on short service commissions or by the seconding of officers from the Army and Navy. Great importance attaches to the last class since an interchange of officers is bound to make for closer and more intelligent co-operation between the services.

The channels of entry for permanently commissioned officers will be through the Cadet College, from the Universities and from the ranks. The cadet college will be the main channel. The course will last two years, during which the cadets will be given a thorough grounding in the theoretical and practical sides of their profession, and will in addition learn to fly the approved training machine, at present the Avro. The college is to open at Cranwell in Lincolnshire early next year, an ideal place for the purpose, with a large and excellent aerodrome and perfect flying surroundings. It will be necessary to accommodate the college temporarily in huts erected during the war, but every endeavour has been made to render these as suitable as possible, and it is proposed to erect a permanent college in the near future. On leaving the college, cadets will be commissioned, and will undergo a short course in air pilotage and practical cross-country flying at Andover. This school will probably not be required before early in 1921. As soon as the cadets have passed this course they will be posted to a service squadron, as it is most important that they should join a unit which they will regard as their home, as the sailor does his ship, or the soldier his regiment, as early as possible. Subsequently they can undergo a course of gunnery, without which no flying officer can be regarded as a service pilot. The gunnery school will be established at Eastchurch, but as the bulk of our present pilots have war experience, will not be required in the next financial year. After 5 years' service, officers will be required to select the particular technical subject they will make their special study during their subsequent career, e.g., navigation, engines, wireless. Short and long courses will be provided in these subjects in order to cater both for the officer who wishes to continue primarily as a flying officer with a working knowledge of one or more technical subjects, and for those who wish to become really expert in a particular branch. Technical knowledge will, inter alia, qualify an officer for selection for high command.

The career of officers commissioned from the Universities or from the ranks—except in the case of boy mechanics receiving commissions, whose case will be dealt with later—will be identical with that of those from the cadet college, except that they will be taught to fly at a flying training wing before joining their squadrons. Short service and seconded officers will be taught to fly at training wings and will attend a course of aerial gunnery and probably one of air pilotage. In view of their short service, it is not proposed, save in special cases, to send them through the advanced technical courses. These officers will be eligible for promotion during their service in exactly the same way as the permanent officers. The technical schools required at once are those dealing with navigation, wireless, photography and engineering. Aerial navigation is practically a new science. An attempt has been made during the current year to work out the theoretical principles in practice at Andover, and considerable progress has been made, but it is obvious that the chief need of aerial navigation will arise when flying over the sea, where the map is of no service, and it is consequently proposed to reopen this school at Calshot in the spring of next year.

Schools of wireless and photography are now in existence at Flowerdown, near Winchester, and at Farnborough respectively, while it is proposed to commence an engineering course, at a suitable station, shortly after Christmas.

For the training of University candidates, short service and seconded officers and officers of the reserve or Territorial Force, it is estimated that seven training wings would eventually be required.

In view, however, of the fact that the short service list has been filled by officers who have already been trained as pilots during the war, it is only proposed to form two of these on a reduced basis during the next financial year to deal with the training of University candidates, a small number of reserve officers and of certain officers granted permanent commissions, with the proviso that they must learn to fly within 12 months. In view of the exceptional facilities for training in Egypt, it is proposed to locate, at least, one of the training wings, together with branch schools of gunnery and air pilotage in that country, but whether it will be convenient to do so next year cannot yet be definitely foreseen.

One other most important school in connection with the training of the officer is essential, and it will probably be necessary to start it on a small scale in 1920. This is a school for flying instructors. The first school of this kind was started during the war at Gosport, and it is hardly too much to say that it revolutionised the art of flying. The science of flight was carefully analysed and the analysis practically applied to the problem of tuition with remarkable results. It is essential in future that all instructors in training wings and all officers of or above the rank of flight commander in service squadrons should have passed through this course. A liberal amount of dual control with a qualified instructor is one of the chief safeguards against the faulty flying which is the cause of the majority of accidents.

Although it is not proposed to open it during the next financial year, an Air Force Staff College must be formed as soon as possible. It is intended to establish this at Halton in the house of the late Mr. Alfred Rothschild, purchased by the Government at his death with the whole estate. The house and its surroundings are eminently suited for the purpose, and there is an aerodrome within a quarter of a mile.

7. **Training of Men.**—The most difficult problem of all in the formation of this force is the training of the men. Demobilisation has removed most of our best mechanics, and the efficiency of the squadrons to be formed depends on the most thorough instruction of those who are to take their place. It has, therefore, been decided to enlist the bulk of those belonging to long apprenticeship trades as boys, who will undergo a course of three years' training before being passed into the ranks. With a preliminary training of the nature contemplated and the practice of their trade during their subsequent service, it is confidently anticipated that these mechanics on passing to civil life will have no difficulty in securing recognition as skilled tradesmen. This is an important consideration since any tendency for the Air Force to be regarded as a blind alley occupation, would be fatal. The training of all these boys will eventually be carried out at Halton Park, where ample and well-equipped technical shops are already in existence. Pending the erection of permanent barracks to replace wooden war-time huts, use will also be made of Cranwell, in Lincolnshire. It has been necessary to speed up the training of some 5,000 boys enlisted during, and shortly after the war, and the residue of these, some 3,000, will complete their training, at Halton. A scheme has been drawn out for the future enlistment of boys by means of a competitive examination, and local education authorities have been circularised with a view to their nominating suitable boys to sit for the examination. By this means it is hoped to secure a really high standard. The first entry under this scheme will take place early in 1920, and the boys will commence their training at Cranwell and will be moved to Halton as soon as the permanent accommodation is ready.

The boys, on successfully passing their final examination, will be graded as leading aircraftsmen, and a certain number will be specially selected for a further course of training, at the end of which they will either be granted commissions, or promoted to corporal. Those granted commissions will join the cadet college.

It is intended to enlist the remainder of the mechanics, of whom more than half will belong to short apprenticeship trades as men, and these will undergo 12 months' training at Cranwell as soon as the boys have moved to Halton. Pending the move, it is proposed to carry out the training of these men at Eastchurch, which, as has already been said, will not be required in its eventual capacity as a gunnery school for another 12 months at least.

Non-technical men will be given a short course of recruit training at the depot at Uxbridge.

8. **Higher Organisation at Home**—As regards higher organisation in the United Kingdom, all units working with the Navy have lately been formed into one command known as the Coastal Area Royal Air Force. The two remaining commands, now known as the Southern and Northern Areas, will, early in 1920, be amalgamated into one command to be known as the Inland Area. This cannot be done earlier owing to the very large amount of work entailed in closing up surplus stations, demobilising surplus personnel and generally clearing up the after effects of the war.

9. DEPOTS.—Each of the two Areas in the United Kingdom will have its repair depot, at Henlow for the Inland Area, and at Donnibristle, near Rosyth, for the Coastal Area. During the next financial year it will be necessary to retain three of the existing stores depots, but it may prove possible at a later date to reduce the number to two, though this is by no means certain. It is hoped that eventually arrangements will be made for all Royal Air Force mechanical transport to be repaired at Slough, but in view of the arrears of work it will be necessary to retain for the present our own repair depot at Shrewsbury. Each overseas theatre will have a combined repair and store depot of a size suitable to the number of squadrons based upon it.

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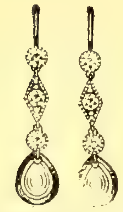
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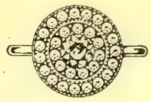
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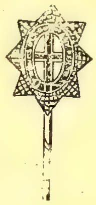
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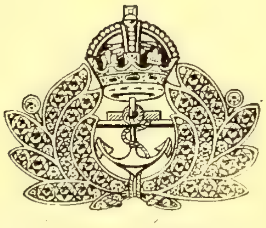
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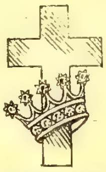
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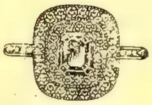
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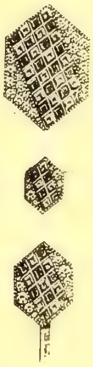
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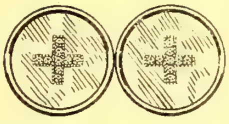
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10. **Necessity for Large Capital Outlay on Accommodation.**—From the above outline of our proposals it will be seen that every endeavour is being made to reduce expenditure on personnel during 1920-1921 to the minimum absolutely essential to create the framework of our future Air Force. This is necessary, if for no other reason, owing to the peculiar position in which the Royal Air Force is placed as regards permanent accommodation. Though some of the wartime buildings can be made to serve for a year or two in their present state, the Air Force does not possess one single permanent barracks, and a large capital outlay on the provision of new buildings and the adaptation of the most suitable of the temporary buildings is inevitable during the first few years. This will be balanced to a certain extent during the next two years by the small requirements in technical equipments due to the large stock remaining over from the war. The principle followed has therefore been to excise rigid economy at the outset over personnel and technical equipment in order to free as large a part as possible of the total sum provided towards the provision of barracks. As time goes on, the building services will absorb less, while the cost of technical equipment, and, to a lesser extent, of personnel, will increase, until eventually the works vote will be little in excess of the cost of maintenance.

It must be recognised, however, that the total cost of building will be large. The boys' barracks at Halton, for instance, with the necessary accessory buildings and the cadet college will no doubt be a heavy item. These are undoubtedly the two most expensive services, but the accommodation for personnel at the majority of our stations will have to be rebuilt or adapted at considerable cost. The outlay must, however, be faced, and it is undoubtedly wise to undertake the bulk of the work in the first few years, while the expense of other services can be kept down.

APPENDIX.

——	Existing or to be formed in 1920-21.	Increase during 1921-22 to.	Increase during 1922-23 to.
I.—UNITED KINGDOM.			
Striking Force	2 Squadrons.	4 Squadrons.	No increase.
Training Wings	2 Wings each of 3 Squadrons.	5 Wings.	6 Wings.
Co-operation with Army Divisions.	1 Squadron.	2 Squadrons.	No increase.
Co-operation with Fleet (Home Waters).	1 Squadron Reconnaissance and Artillery machines.	No increase.	No increase
	1 Flight Ships' fighters.	1 Squadron Ships' fighters.	No increase.
	½ Squadron Torpedo machines.	1 Squadron Torpedo machines.	No increase
	1 Flight Flying Boats	1 Squadron Flying Boats.	2 Squadrons Flying Boats.
	1 Flight Float Seaplanes.	No increase.	No increase.
Communication Squadron	1 Squadron.	No increase.	No increase.
Experimental Stations	4 Stations for Aeroplanes, Seaplanes, Torpedo machines and Wireless respectively.	4 Stations as before and trial ground for bombs and machine guns in addition.	No increase
Schools and Training Centres	Cadet College. Navigation School. Flying Instructors' School. Administrative and Technical School for Officers. Wireless and Electrical Training School. School of Photography. School of Co-operation with Navy. School of Co-operation with Army. Balloon Training. Airship Training.	As for 1920-21, and in addition, School of Air Pilotage. School of Gunnery. (N.B.—The majority of the Schools will be on a reduced basis in 1920-21, and will gradually increase to full strength in the two succeeding years.)	As for 1921-22, substituting Staff College for Administrative and Technical School for Officers, and in addition Flying Officers' Training College (for the preliminary training of direct entry Officers).
	Boys' Training Centre. Technical Men's Training Centre. R.A.F. Depot and Non-Technical Men's Training Centre.	No increase.	No increase.
Depots	2 Aeroplane Repair Depots. 1 M.T. Repair Depot. 3 Stores Depots.	As for 1920-21 except that the M.T. Repair Depot will drop out as soon as the repair work for R.A.F. vehicles can be undertaken at Slough.	As for 1921-22.
Airships	1 Station.	No increase.	No increase.
II.—OVERSEAS.			
India	8 Squadrons 1 Depot.	No increase.	No increase.
Egypt	7 Squadrons. 1 Depot.	7 Squadrons. 1 Depot. 1 Training Wing.	7 Squadrons. 1 Depot. 1 Training Wing. 1 School of Air Pilotage. 1 School of Gunnery.
Mesopotamia	3 Squadrons 1 Depot.	No increase	No increase.
Malta	1 Flight Seaplanes.	1 Squadron Seaplanes.	No increase.
Alexandria	1 Flight Seaplanes.	1 Squadron Seaplanes.	No increase.
Mediterranean	1 Flight Float Seaplanes on Carrier.	No increase.	No increase.

£10,000

AUSTRALIAN FLIGHT

The Winner

Capt. Ross Smith

M.C., D.F.C. A.F.C.,

on a

VICKERS - VIMY BIPLANE

lubricated his

ROLLS - ROYCE ENGINES

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11. **Research.**—One matter of supreme importance has not yet been mentioned, namely, the provision to be made for research. The departments of Supply and Research are now being transferred from the Ministry of Munitions to the Air Ministry, and a portion of the experimental establishments are a charge on the Air Force votes. Steady and uninterrupted progress in research is vital to the efficiency of the Air Force, and to the development of aviation generally, and on it depends both the elimination of accidents and the retention of the leading position we have established at such heavy cost during the war. The existing establishments must therefore be retained during the ensuing financial year at a sufficient strength to ensure that urgent work shall continue. Some of the work which was urgent under war conditions can, however, now be postponed until progress with the building programme liberates more money for other purposes. The principal aeroplane research establishments are at Farnborough, Biggin Hill, Martlesham Heath, and Grain, while airships' research will be undertaken at Cardington and Howden.

12. **Civil Aviation.**—No allusion has been made to civil aviation in this paper, which has been confined to the Service aspect of the question.

H. M. Trenchard,
Chief of the Air Staff.

Air Ministry, Nov. 25th, 1919.

THE DEATH OF MR. JOSÉ WEISS.

It is with very deep regret that one announces the death of Mr. José Weiss, one of the pioneers of British Aviation. The news comes too late for an adequate account of Mr. Weiss's work to be given in this paper to-day, but one hopes to deal with his achievements more fully next week.

Mr. Weiss was one of the first exponents of inherent stability, and his experiments of 1908-9 were of great value to those who at a later date produced satisfactory aeroplanes. For the past twelve months Mr. Weiss has suffered from ill-health, and he passed over on Thursday last, December 11th.

A McCUDDEN MEMORIAL.

Some months ago a few friends of the late Major J. T. B. McCudden, V.C., and of his two brothers, William McCudden and Anthony McCudden, who were also killed while flying in the King's service, decided to get together a small fund with which to erect a memorial to the three brothers. It is the wish of their father and mother that this memorial shall be set up at Chatham, where all three were born.

The following subscriptions have already been received:—

Lord Weir of Eastwood, £10 10s.; Air Marshal Sir H. M. Trenchard, Bart., K.C.B., D.S.O., £2 2s.; Major-Gen. Sir F. M. Sykes, G.B.E., K.C.B., C.M.G., £2 2s.; Air Commodore H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., £5; Air Commodore P. W. Game, C.B., D.S.O., £1 1s.; Air Commodore C. A. H. Longcroft, C.M.G., D.S.O., A.F.C., £1 1s.; Wing Comdr. R. G. Blomfield, D.S.O., £4 4s.; Wing Comdr. L. W. Rees, V.C., O.B.E., M.C., A.F.C., £2 2s; "Five Years in the R.F.C.," £3 3s.; the Sopwith Aviation Co., Ltd., £2 2s.; Martinsyde, Ltd., £2 2s.; C. G. Grey, £2 2s.; Major C. C. Turner, £2 2s.; Stanley Spooner, £2 2s.; Capt. P. D. Acland, £2 2s.; Major E. L. Gilchrist, M.C., D.F.C., £2 2s.; Mrs. Rhys Davids, £2 2s.; Capt. G. J. C. Maxwell, M.C., D.F.C., A.F.C., £2 2s.; Capt. T. B. Marson, £2 2s.; Capt. Doyle, D.F.C., £2 2s.; Capt. Leighton, M.C., £2 2s.; Capt. G. W. Robarts, M.C., £1 1s. Total, £57 4s.

This amount is in itself sufficient for the proposed memorial at Chatham, but it is thought by those responsible for the fund that many more friends of the McCudden family would like to subscribe, and that very probably a number of admirers of the work of these young men who died for King and country would like to add to the amount, though they did not know them personally.

Also, as far as is known, there is no other instance of three brothers being killed as pilots, and so there is good reason why all those who are concerned with flying should contribute to a memorial to a family which has made a greater sacrifice than any other in winning for this country the Command of the Air.

If the response to this appeal is as great as it should be, it is proposed that, after erecting the memorial at Chatham, the Balance of the fund shall be devoted to endowing another form of memorial which will be of direct use to those who fly in years to come. This might take the form of a McCudden Memorial Bed at the R.A.F. Hospital, or a McCudden Memorial Scholarship in Aeronautics at one of the Universities, according to the wishes of the majority of the subscribers.

It is hoped that a large number of the officers who served with either of the three McCudden brothers, and a still larger number of those who know them only by reason of their deeds, will subscribe to the fund. Subscriptions, which are limited to a maximum of £2 2s., should be sent to Capt. Gerald C. Maxwell, M.C., D.F.C., at Room 663, Air Ministry, Kingsway, W.C.2.

THE SERVICE ESTIMATES.

The Navy, Army, and Air Force Estimates, each of which has been presented to the House of Commons during the past week, will be dealt with in detail in the next issue of The Aeroplane.

TOUCHÉ.

One is always pleased to acknowledge a hit by those whom one has criticised, or, perhaps, one should rather say, by those whose legs one has pulled. Last week one remarked that, despite the official statement that technical reports were being issued by the Air Ministry, no "technical information" had been received from the Air Ministry's Department of Information. In the "Aeronautical Engineering" Supplement of the same issue of this paper there appeared an illustrated article on navigating instruments, which article, illustrations and all, had been issued by the Department of Information.

"A hit. A palpable hit!" undoubtedly. But—the statement that no technical information had been received appeared in the third instalment of a long article which was written three weeks before, and the article on instruments was received from the Air Ministry a week before it appeared in print, so that the statement was strictly true when it was written. Also, the highly scientific technician who edits "Aeronautical Engineering," informs one that the article on navigating instruments, though very interesting, was, in fact, of a commercial nature, and not at all technical, and as one is oneself "a child in these matters" one is forced to accept his diagnosis.

THE ROYAL AERO CLUB AND FLYING COMPETITIONS.

Apropos the letter which appeared in The Aeroplane recently, suggesting that the Committee of the Royal Aero Club might at least turn over in its sleep and take a momentary interest in the sport of aviation by deciding upon some form of flying competition for next year, a correspondent writes: "A series of flying competitions next year would in all probability assist commercial aviation a little more than a golf tournament among the members, although, of course, in that case the club does get a good deal of publicity through the 'Daily Mirror.' "

One is entirely in sympathy with this remark. If the committee of the club would think a little less about golf and bridge and a little more about the sport of aviation (for the regulation of which the Royal Aero Club is supposed to exist) it might be of actual value to the development of civil aviation.

A NEW SPEED RECORD CLAIM.

At Villacoublay, on Dec. 15th, M. Sadi Lecointe, on a Spad biplane (Hispano-Suiza engine), flew over a measured kilometre under official observation at a speed of 307 kilo. 225 metres an hour (approximately 191 miles an hour). No further details are at present available. It is not stated whether or not this speed is the mean of two flights made in opposite directions, as is necessary in the case of a claim for a record.

THE FLIGHT TO AUSTRALIA
AND
"K.L.G." SPARKING PLUGS

Another Milestone in Flying History.

Capt. Ross Smith on the Vickers-Vimy-Rolls machine which has accomplished this Epic flight, infinitely the most remarkable sustained effort in the history of Aviation, used **"K.L.G." SPARKING PLUGS.**

The reason for his choice was, doubtless, that the plugs which were used by Sir John Alcock for his Trans-Atlantic flight (Vickers-Vimy-Rolls machine), by Mr. H. Hawker in his glorious failure over the same course (Sopwith-Rolls), and by the R.34 for her double trip to America and back (Sunbeam Coatalen), inspired him with absolute confidence.

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K.L.G. were chosen."

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THE AUSTRALIAN FLIGHT.

Everyone concerned with the successful flight to Australia by the Vickers "Vimy" biplane and its Rolls-Royce engines deserves the heartiest congratulations. The enterprise in itself was sufficiently difficult, but it has been made considerably more so by the fact that the Department of Civil Aviation and the Royal Aero Club in collusion postponed the start of the competition until a date after which none could reasonably expect fair weather. On the other hand, it may perhaps be argued that if an earlier date for the start had been fixed no aeroplanes would have been ready to start.

One knows of at least one machine—a Sopwith "Pup" with an 80-h.p. Le Rhone engine—which was to have been piloted by Lieut. Bert Hinkler, late R.N.A.S., which could have started several weeks before the authorised date, and judging by the success attending the efforts of the gallant M. Poulet with two 80-h.p. Le Rhone engines, it is reasonable to suppose that Mr. Hinkler would have accomplished his journey, though perhaps not within the statutory 30 days.

Here one would like to place again on record the opinion that the Department of Civil Aviation and the Royal Aero Club were both acting outside of their rights and also outside the spirit of sportsmanship in fixing a date and imposing regulations as they did, for it will be remembered that Mr. Hughes, on behalf of the Australian Government, offered a prize of £10,000 to "the first Australian aviator to reach Australia by air." By imposing a time-limit, regulations of various sorts, and a date before which none was allowed to start, the authorities acted in a manner contrary to the spirit of the Australian offer and to a considerable extent spoiled the competition.

None the less, as is customary in time of stress, the British spirit triumphed over, or because of, obstacles, and the greater credit is therefore due to Capt. Ross Smith, his brother Lieut. Keith Smith and Serjts. Bennett and Shiers. One knows that Capt. Ross Smith himself would be the first to disclaim any more credit for himself than is due to his companions.

There are others also who are entitled to a goodly share of the honour. For example, there is Mr R. K. Pierson, the designer of the machine. Also, there are Mr. Maxwell Muller and Mr. Archibald Knight, who run the Vickers Weybridge works so ably and have been responsible for the construction of all the Vimy machines, not to mention many hundreds of other machines which have won the firm a high reputation for good workmanship during the war. Also, there is Capt. Acland, now chief of the Vickers Aviation Department, who made the arrangements for the flight. And it is well to remember the late Major Herbert Wood, to whose foresight was due the adoption of the Vimy design, and the late Capt. Gordon Bell, to whose great skill and experience as a pilot were largely due the final modifications of the type.

Strange Comments.

The success of the flight has produced a number of strange comments thereon in the shape of pronouncements from people in public positions, some of which are given verbatim in the report of the flight which appears hereafter.

Perhaps the most amusing of all is that from Mr. D. Lloyd George, presently Prime Minister of Great Britain, whose remark that the flight "shows how inventions of war can advance the progress of peace" is typical of the man who, in his desire to be in the front of public opinion, neglects entirely to learn what has been done in the past. The achievement of the "Vimy" machine shows perhaps how the experiences of war can be adapted to the work of peace, but nobody concerned with the machine or its engines would claim that it contains any actual inventions of war. The "Vimy" and its engines are rather the development of knowledge gained long before the war by the pioneers of aviation.

Mr. Churchill's remark that the flight shows that "the new element has been conquered for the use of man," though perhaps badly expressed, does at any rate convey the idea which Mr. Churchill intended to convey, namely, that this great flight from one extreme of the British Empire to the other shows that our aircraft have conquered the air for commercial purposes as they conquered it in war. Mr. Churchill's enthusiasm probably prevented him from realising for the moment that air is certainly not a new element but is at least as old as any form of life.

The Air Council is itself to be congratulated on the moderation and sound common sense of its message. The flight is in fact an outstanding example of skill and endurance. Nothing could exceed the pluck and determination shown by the crew in facing the appalling weather conditions under which they flew, nor their skill in nursing their engines and in keeping their correct course.

The Real Mail Service.

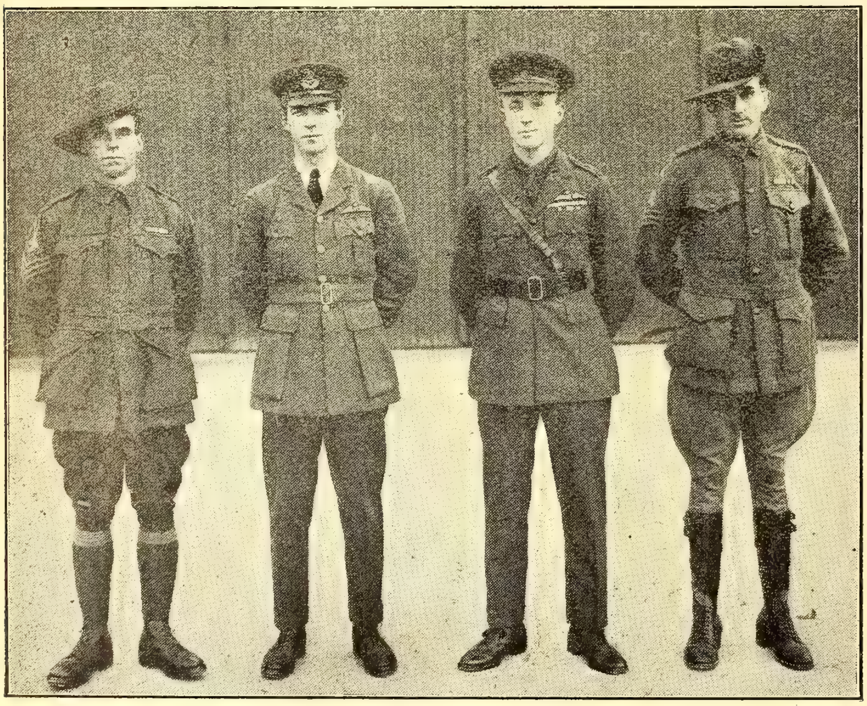
Quite one of the silliest comments on the performance is that alleged to have been made by Lord Inchcape, presiding at the meeting of the P. and O. Steam Navigation Co., on Dec. 11th. He is reported as having said that he read in a morning journal that an aeroplane had reached Calcutta in 16 days from London. That was just the time that their mail took when it went by way of Brindisi through the Suez Canal, down the Red Sea, across to Bombay and over to Calcutta by rail.

Apparently Lord Inchcape, like many other commentators on the performance, entirely omitted to note that the "Vimy's" performance in no way resembles the work of a regular mail service. The "Vimy's" performance may, in fact, be compared with the late Col. Burnaby's ride to Khiva, or with one of those famous cavalry rides popular before the war, such as that from Berlin to Vienna, in which the same horse and man had to complete the full journey.

A mail service, on the other hand, would be run by relays of machines and pilots, each pilot and machine covering a stage of not more than 500 or 600 miles, and then handing the mails and passengers to a fresh pilot and crew. In this way the mails would travel at least 1,000 miles a day, even during the short days of winter, and in the summer they would probably travel 1,500 miles a day. Thus Calcutta would be reached (a distance of nearly 7,000 miles) in four to seven days, and Australia would be reached in a matter of 10 to 15 days, so that the air mail time to Australia would be in fact something less than Lord Inchcape's record time to Calcutta.

An Unfortunate Comparison.

That usually well-informed journal, the "Morning Post," in common with the various other papers, makes a very stupid mistake over the flight. It says: "A couple of years ago the feat would have been regarded as a very doubtful enterprise, and three or four years ago it was in fact impossible." This, of course, is sheer nonsense.



Sjt. W. H. Shiers, A.F.M., Lieut. Keith Smith, Capt. Ross Smith, M.C., D.F.C., A.F.C., Sjt. J. M. Bennett, M.S.M., A.F.M.

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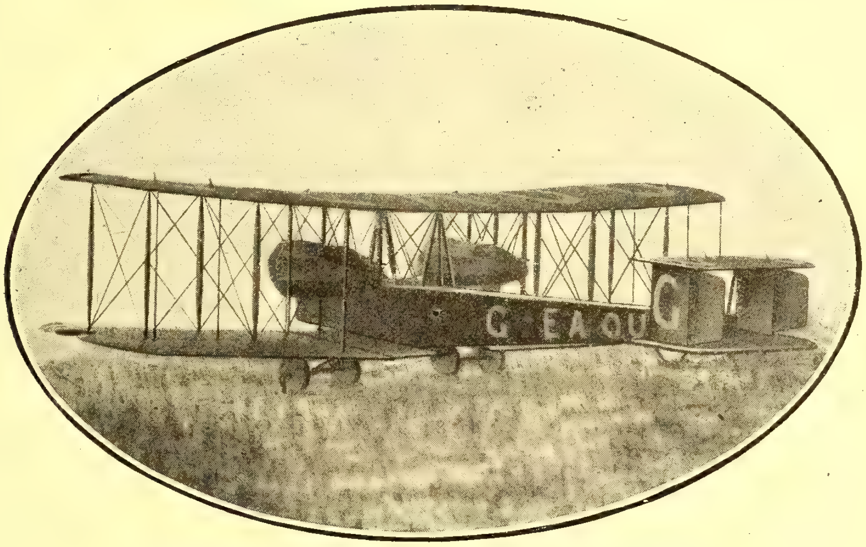

The Start from Hounslow. 9.10 a.m. November 12th, 1919.

The FIRST FLIGHT from ENGLAND to AUSTRALIA

Nov. 12th to Dec. 10th, 1919.

TIME—27 days, 20 hrs. 20 mins. DISTANCE—Approx. 11,500 miles.

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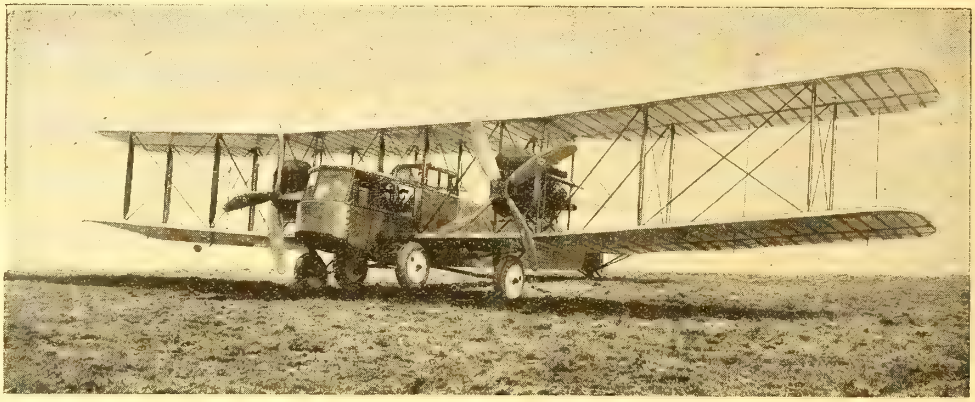

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There is also the Grahame-White—Rolls-Royce Aero Limousine (9 seater), which is of the same construction as the 5-seater, with slight variations. The front cabin has been enlarged to take 6 passengers and the pilot. Moved farther back, between the pilot and planes, a special cabin has been placed to afford comfortable accommodation for 2 additional passengers or luggage.

For those requiring a sporting machine there is the Grahame-White Bantam Single-seater, fitted with 80 h.p. Le Rhone Engine. Speed 100 miles per hour.

Illustrated catalogues and further information regarding the above and other types of machines may be obtained upon application to:

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SPEED WITH SAFETY

In 1913 the late M. Brindejonc des Moulinais, on a Morane with an 80-h.p. Le Rhone engine, flew from Paris to Warsaw, about 900 miles, in a day, continuing on following days to Petersburg and thence via Königsberg, Copenhagen, Bremen, and Amsterdam, to Brussels and London, after which he flew back to Paris, in all a total distance of 3,210 miles. This tour was, in fact, but little inferior in distance to a flight from London halfway to Calcutta. And so far as aerodromes were concerned, Europe in those days was less well equipped than is the route to India to-day.

Also in 1914 Herr Rudolf Böhm flew for 24 hours and 12 minutes without alighting, a feat which has never been achieved since then, though two other German pilots had previously come very near it. The only other aviator to approach the time was that same brave M. Poulet who so nearly achieved the distinction of being the first aviator to fly to Australia from Europe. M. Poulet's duration record was 18 hours.

Furthermore, just before the war Herr Suvelack flew from Berlin to the Turkish frontier at Eggri Palanka with a passenger in a non-stop flight of 1,000 miles—a longer non-stop flight than any accomplished in the course of the voyage to Australia. Thus one sees that had there been adequate organisation the voyage to Australia might very possibly have been achieved before the war— and by a German at that.

Knowing the Course.

Apropos organisation,—it has been pointed out that Capt. Ross Smith had a considerable advantage over his competitors in that he was the only one who had been over the course before starting. It will be recalled that Capt. Ross Smith accompanied Brig.-Gen. Borton in his survey of the course. As, in fact, he reached the more difficult portion of the course before any of his competitors, this advantage would appear not to have been as great as it might have been if any of his competitors had reached that section before him and had crashed en route through ignorance of the course.

On the other hand, there is also the equal possibility that if Capt. Ross Smith also had been ignorant of the course he might have crashed his machine in landing anywhere between Calcutta and Australia, and so might have been overtaken. In either case his previous knowledge of the course was an important factor in his success.

Yet one may equally argue that the fact of his having covered the course beforehand is the greater evidence of his courage in that he knew the difficulties with which he would be faced and so did not enter upon the last stages in that ignorance which is bliss.

It is also of interest to note that as the result of the study of the course by Gen. Borton and Capt. Ross Smith, competitors were advised by the Air Ministry to fit their machines with floats at Calcutta and cover the rest of the course as seaplanes. Despite this, Capt. Ross Smith himself preferred to take the risk of covering the whole distance with his machine fitted with a land undercarriage.

The Great Deed.

However, the great point is that after all the flight has been done and that British aviators have done it. The fact that it might have been done months before is merely consonant with the British way of doing everything. And we have largely to thank our national luck for the fact that owing to the illness in India of his faithful friend and mechanic, M. Benoist, M. Poulet did not get there first.

Though, as one has already pointed out, the voyage could have been done some months earlier, and might in point of fact have been done five years ago, none the less we have now definite proof that given careful piloting and skilful mechanical attention, a British aeroplane with British engines can maintain truly remarkable regularity over an extraordinary distance.—C. G. G.

THE END OF THE JOURNEY.

The Vickers "Vimy" Machine.

The first flight from Great Britain to Australia was accomplished on Dec. 10th, when Capt. Ross Smith, M.C., D.F.C., A.F.C., Lieut. Keith Macpherson Smith, Serjt. J. W. Bennett, A.F.M., M.S.M., and Serjt. W H. Shiers, A.F.M., in their Vickers-Vimy machine, arrived at Port Darwin at 5.30 a.m. Greenwich mean time, or 3.30 p.m. Australian time.

The last reports published in this paper carried Capt. Ross Smith's messages up to his arrival at Singapore. These messages continue as follows :—

The Pilot's Dispatches.

"After a day's rest we left Singapore for Kalidtjatti, near Batavia, in Java. This was a distance of nearly 700 miles, and the worst stage of the journey as regards landing-grounds. On arrival at the Dutch military flying school we were greeted by the Governor-General of the Dutch East Indies and various other people. We had expected that the last stage of the journey from Singapore to Port Darwin would be the most difficult, but as soon as the Governor-General heard that aeroplanes were flying from England to Australia in this £10,000 competition he ordered aerodromes to be constructed at different points through the Dutch islands.

"Next day we went from Kalidtjatti to Sourabaya in an uneventful trip. The aerodrome had been constructed on reclaimed land which was apparently hard and quite fit to land on, but was in reality very soft underneath. We landed successfully, but soon after, when taxi-ing, the machine sunk to the axles. It was necessary to obtain the assistance of a local engineer and 200 coolies to get the machine out again. We decided that the only possible way to get the machine off again would be to make a road of bamboo mats for the wheels.

"By dark we had constructed a thin road sufficient to get the machine to the end of the ground. It was very slow work as we had not sufficient mats for the whole distance, and had to use them in relays. It had taken us seven hours to move the machine 400 yards, during which time the machine stood a lot of pulling about by the coolies. We were all thoroughly tired out after our labours and had intended to go to bed early, but the British residents of Sourabaya had arranged a dinner in the evening. We were at the aerodrome again at daylight. During the night the engineer had collected as many bamboo mats as possible from the whole district—in fact, he had pulled down numerous native houses to get a sufficient quantity

"By 9 o'clock in the morning we had built a road for our wheels, about 300 yards in length, and attempted to start off after running about 500 yards. Some of the mats flew up and caught in the tail and swerved the machine round off the track, with the result that we were once more very badly bogged. Again we dug her out, with the aid of the coolies, and got back to the starting place. We then decided to widen the track and lace the mats together. We succeeded in getting more mats, and eventually at twelve o'clock had constructed a road of laced mats 350 yards in length and 20 yards wide, and we then started up again and succeeded in getting off with bamboo flying in all directions from our propellers.

"We were thankful to leave Sourabaya and much relieved to be in the air once more. We then flew due east along the islands and landed at Bima, in Sumbawa, where there is an excellent Dutch aerodrome. Here we were entertained by the local Sultan and Dutch Controller, both of whom did everything possible for our comfort. Next morning we started for Atamboca, in Timor Island, where there is a Dutch military station. We were entertained by the commandant, who told us that the natives regarded us as dead spirits who could come back to the world, and as they could not rest spent their time in flying from place to place. We were very glad to be safely on the ground in Timor, as it meant only 350 miles from there to Port Darwin. The country is very similar to parts of Australia, and is covered with gum trees, which reminded us very much of home.

"On Wednesday, Dec. 10th, we were up at dawn and rode from the military camp to the aerodrome, a distance of three miles, on Timor ponies. Just as we were ready to start a thick fog came on which delayed us for about two hours. However, about 8.30 a.m. the fog lifted and we started off and headed for Darwin, flying by compass.

"After being out of sight of land for about two hours we sighted the cruiser "Sydney" in exactly the position we had asked her to be in in case of need. We were very relieved to see her, as we felt that if anything did go wrong over the water we would have friends to rescue us. We had no wireless on board, so we dropped messages in a bottle attached to a small parachute made by ourselves, stating that all was going well. That message was picked up.

"Two hours after leaving the "Sydney" we sighted Bathurst Island, our first glimpse of Australia, and about three-quarters of an hour later arrived at Port Darwin."

Some Facts and Figures.

As the machine left Hounslow at 9.10 a.m. on Nov. 12th, the journey was completed in 668 hours 2 min. Thirty days, or 720 consecutive hours, was the time allowed by the rules of the Australian Government's Competition, and so the voyage was completed well within the time limit.

A telegram has been sent in the following terms by the High Commissioner of Australia to Mr. Hughes, the Prime Minister :—

"Have been requested by Royal Aero Club to transmit the following to you :—' Subject to verification of machine, Captain Ross Smith has fulfilled the conditions laid down by Australian Government for £10,000 prize for flight from Great Britain to Australia. The Royal Aero Club, under whose competition rules and auspices the flight was made, will award prize to Captain Ross Smith. Royal Aero Club tenders its heartiest congratulations to the Prime Minister and all Australians on the successful accomplishment of this epoch-making flight.'—(Signed) FISHER."

Congratulations.

Messages of congratulations have been sent to Capt. Ross Smith. In fact, a telegram from Port Darwin dated Dec. 11th stated that Capt. Ross Smith was inundated with telegrams.

The Air Ministry announced the text of the most important messages as follows :—

From H.M. The King :—

"Delighted at your safe arrival. Your success will bring Australia nearer to the Mother Country, and I warmly congratulate you and your crew.—George R.I."

From the Prime Minister :—

"Heartiest congratulations. Your flight shows how inventions of war can advance progress of peace.—D. Lloyd George."

From the Secretary of State for Air :—

"Well done. Your great flight shows conclusively that the new element has been conquered for the use of man.—W. S. Churchill."

From the Air Council :—

"Air Council congratulate you and crew on great skill and endurance shown in your achievement.—W. A. Robertson, Secretary Air Council."

From the Comptroller-General of Civil Aviation :—

"Most sincere congratulations on successful termination of great flight. Your progress has been watched by all here with keenest interest.—F. H. Sykes."

Comment upon the excellent performance of the machine and the two 350 h.p. Rolls-Royce "Eagle" engines is unnecessary, as their merit is so obvious, and in his diary Capt. Ross Smith continually pays them tribute.

The voyage to Australia has been made in quicker time, for in June, 1893, mail was carried from London to Adelaide in 25 days 11½ hours, going overland to Brindisi and thence by the P. and O. liner "Himalaya."

The always entertaining American Press—to wit, the New York "Tribune"—says :—"He has done a wonderful thing for the prestige of the British Empire and the fame of the Smiths. Australia owes him £10,000, and he has earned the money." The Convention of Smiths, who hold an annual meeting, will make Capt. Ross Smith "an honorary member of America's biggest and not least illustrious family."

The actual flying time, according to a "Times" correspondent, was 124 hours and the average speed 75 m.p.h. Capt. Ross Smith did not carry food, except tinned bully. His engines went well, but he had to work practically every night tinkering at the machine. He always arose at dawn. The hospitality of the Netherland Indies officials was overwhelming.

Mr. Hughes sent a congratulatory message to Port Darwin for presentation to the aviators on arrival, and has offered to purchase the machine for the War Museum. A message from Melbourne states that the military authorities are ascertaining the suitability of Flemington racecourse as a landing place there, so that there will be accommodation for the large crowd expected to witness the arrival of the machine.

The following table shows Capt. Ross Smith's progress from the time he left Hounslow on Nov. 12th :—

Miles.	Place.	Date of Arrival.
603	Lyons	Nov. 12th
1,050	Pisa	Nov. 13th
1,225	Rome	Nov. 15th
1,562	Taranto	Nov. 16th
—	Suda Bay	Nov 17th
2,845	Cairo	Nov 18th
3,259	Damascus	Nov. 19th
—	Ramadie	Nov. 20th
4,047	Basra	Nov. 21st
4,660	Bunder-Abbas (Persia)	Nov. 23rd
5,401	Karachi	Nov. 24th
6,093	Delhi	Nov. 25th
6,443	Allahabad (with a stop at Muttra)	Nov. 27th
6,895	Calcutta	Nov. 28th
7,342	Akyab	Nov. 29th
7,688	Rangoon	Nov. 30th
8,038	Bangkok	Dec. 1st
—	Singora	Dec. 2nd
8,900	Singapore	Dec. 4th
9,549	Kalidtjatti (West Java)	Dec. 6th
10,341	Bima (Sumbawa)	Dec. 8th
11,294	Port Darwin	Dec. 10th

THE MARTINSYDE CREW.

Henry Fraser, Mechanic. **Capt. C. E. Howell, D.S.O., M.C., D.F.C., Pilot.**

THE BLACKBURN KANGAROO.

Captain Wilkins, M.C., arrived at Suda Bay on Dec. 5th and left for Egypt on Dec. 8th. When forty miles from land the main return oil pipe of the port engine broke and the pilot had to return to Suda Bay. This flight was successfully accomplished on the starboard engine alone, and a safe landing was made. The engine itself was undamaged.

THE MARTINSYDE DISASTER.

The Air Ministry has announced that Capt. C. E. Howell, D.S.O., M.C., D.F.C., left Taranto at midday on Dec. 9th for Athens.

Lloyd's agent at Corfu telegraphed on Dec. 13th :—

"Information just received, British aircraft wrecked off St. George's Bay, Corfu, Dec. 10th; no hope of survivors; log washed ashore; certificate number 332; identification mark G U M R, Captain C. E. Howell, Melbourne; number of licence 412; Hounslow for Melbourne. Leaving to investigate."

Such precautions had been taken that floats were awaiting the machine at Calcutta for its voyage over the sea in the last part of the journey. Unfortunately when the accident occurred the machine was still fitted for landing.

This fatality and the mishap which occurred to the Blackburn "Kangaroo" point to the safety of a twin-engined machines on such long-distance flights.

Captain Howell had sent his wife to Australia on board the "Orsova," and had hoped to overtake the steamer near Naples. Before starting he intimated that he would greet his wife by circling round the vessel and dropping a message.

THE VICKERS-ROLLS PRESENTATION TO THE NATION.

The presentation to the nation of the Vickers-Vimy Rolls-Royce aeroplane which, piloted by Capt. John Alcock and Lieut. Arthur Whitten Brown, made the first non-stop trans-Atlantic flight last June, was performed at the New Science Museum building, South Kensington, on Dec. 15th.

The chair was occupied by Dr. Ogilvie, director of the Science Museum, and among those present were Air-Marshal Sir H. M. Trenchard, Lieut.-Col. J. T. C. Moore-Brabazon, M.P., Capt. Sir John Alcock, Mr. Claude Johnson (of Rolls-Royce, Ltd.), and the High Commissioners for Australia, New Zealand, Canada, and Newfoundland.

Mr. Douglas Vickers said that all would agree with him that the aeroplane would constitute an historical landmark. It was not in any way a machine specially made for the occasion upon which it had been used; it was to have been a Berlin "bomber." He considered the flight from London to Australia as perhaps greater than the Atlantic effort, for its difficulties had included a new route hardly surveyed, and many variations of climate. The effort had demonstrated that it would be good to arrange a relay service, and then letters might be sent to Australia within a week.

On behalf of Sir Alfred Mond, Dr. Ogilvie accepted and acknowledged the gift.

Mr. Claude Johnson asked the chairman to accept that portion of the aeroplane for which Rolls-Royce were responsible.

A lunch followed at the Hyde Park Hotel. Mr. Douglas Vickers, who presided, first proposed "The Guests," to which Sir Alfred Mond responded with his wonted eloquence. Mr. Vickers then proposed, "The closer reunion of the old Mother Country and Australia."

Mr. Fisher (High Commissioner for Australia), in responding, said that the machine on which Capt. Ross Smith made his famous flight would never return to this country. Australia would keep that machine. In an enterprise of that kind it was only to be expected that there would be losses, and they bowed their head to those daring and brave men who tried to carry their machines through but failed.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE PRODUCTS OF THE BRITISH AIRCRAFT INDUSTRY.

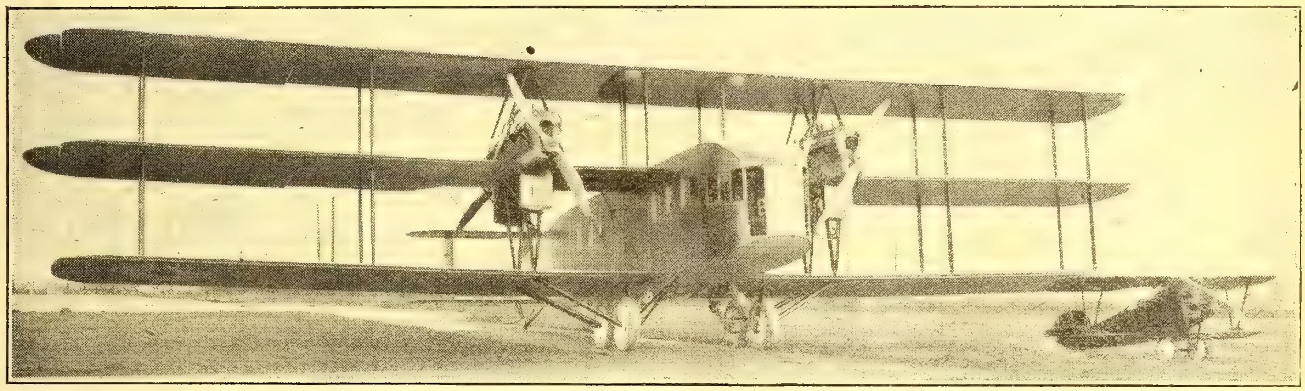
In this and the two following issues of THE AEROPLANE there will be found a description of a number of aircraft, aero-engines, and aeronautical accessories which represent what is being produced by those British firms which are maintaining their interest in the Aircraft Industry.

The information relating to these various products has been supplied by the firms themselves, and it may be assumed that the amount of information supplied is a measure of the extent to which each firm believes its own work to be of interest.

Also, the order in which the matter is arranged corresponds roughly to that in which the various concerns have responded to a request for information as to their work.

The great majority of these firms are members of the Society of British Aircraft Constructors, an organisation which has done more for British Aviation than any other.

THE BRITISH AND COLONIAL AEROPLANE CO., LTD.



The Bristol "Pullman" Triplane, and the Bristol "Babe." A study in contrasts.

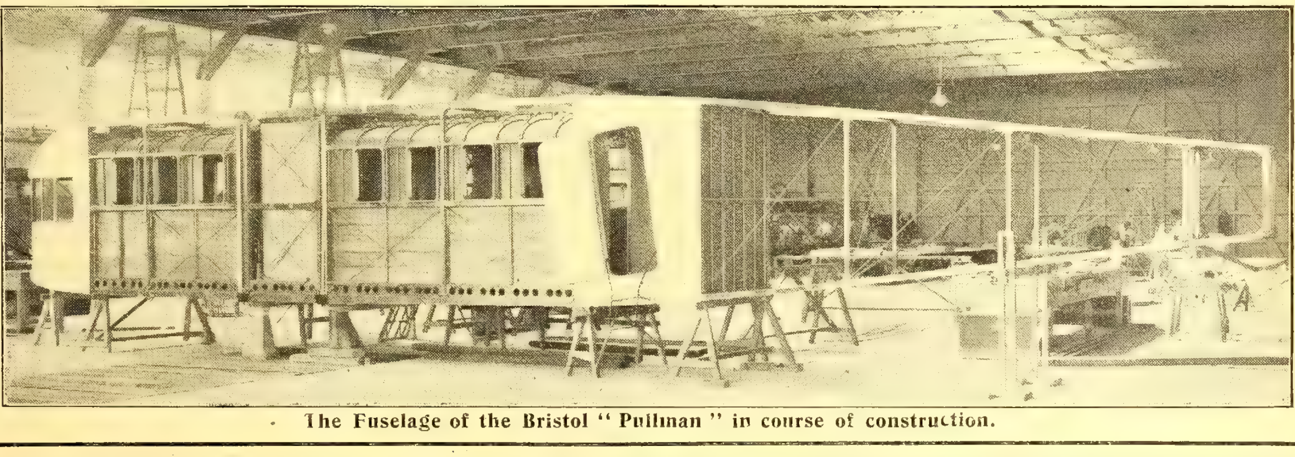
Founded in 1910 by the late Sir George White, the British and Colonial Aeroplane Co., Ltd., usually known as the Bristol Company, have since their earliest days taken a prominent part in the development of British aviation. During the war they did much to secure the necessary supplies of aircraft for the Allied Armies, and the Bristol "Fighter" probably did more than any other single type of aeroplane to secure that superiority in the air which so helped towards the final victory.

With the coming of peace they naturally have set their house in an order appropriate to the changed conditions, and the following details of their more recent machines—some of which will be on show at Paris—will give an idea of their preparedness for the demands of to-morrow.

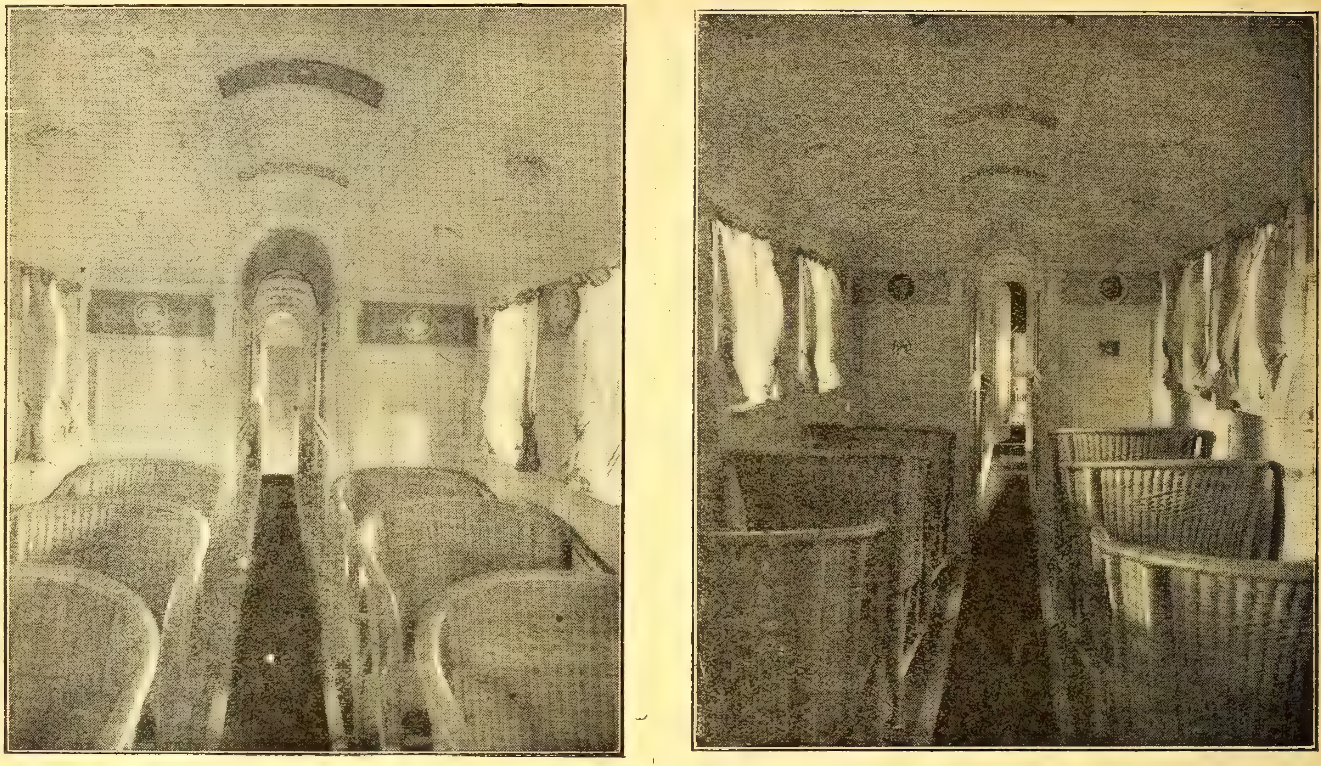
THE "BRISTOL" PULLMAN TRIPLANE.

Amongst the large aeroplanes constructed to provide a high-speed machine capable of carrying a considerable load of passengers and cargo in addition to fuel for a lengthy flight, the "Bristol" Pullman Triplane occupies a position apart. The four 410-h.p. Liberty engines with which it is fitted ensure absolute reliability and safety, whilst the tasteful and luxurious appointments of the roomy Pullman ensure the highest comfort a traveller may desire.

The car in which the 14 passengers, carried in addition to the pilot and engineer, are accommodated is seven feet in height and wholly enclosed. A central gangway affords access to the comfortable fauteuils which, though removable, are normally placed on either side of the car. Large Triplex glass



The Fuselage of the Bristol "Pullman" in course of construction.



Two Interior Views of the Bristol "Pullman"—on the left looking aft and on the right looking forward.

windows are provided for the convenience of each passenger, and an adequate system of heating and lighting by means of electricity is installed. The question of ventilation has also been carefully studied.

Any or all of the seats may be removed for the conveyance of mails or cargo, and a total space of 570 cubic ft. can thus be made available. In addition to the two pilots the machine is capable of lifting a load of 2,700 lb. and fuel for 5 hours' flight, or alternatively 4,000 lb. with fuel for 2½ hours' flight. These figures are based on an economical speed of from 100 to 103 m.p.h., i.e., at three-quarter throttle, giving a sufficient reserve of power to reach a maximum speed of 125 m.p.h. if necessary.

The following examples give an idea of the manner in which the accommodation can be arranged, but these figures may be varied to suit requirements :—

	Passengers.		Cargo.
(1)	14	and	280 lb.
(2)	9	..	1,180 lb.
(3)	4	..	2,080 lb.
(4)	0	,,	2,800 lb.

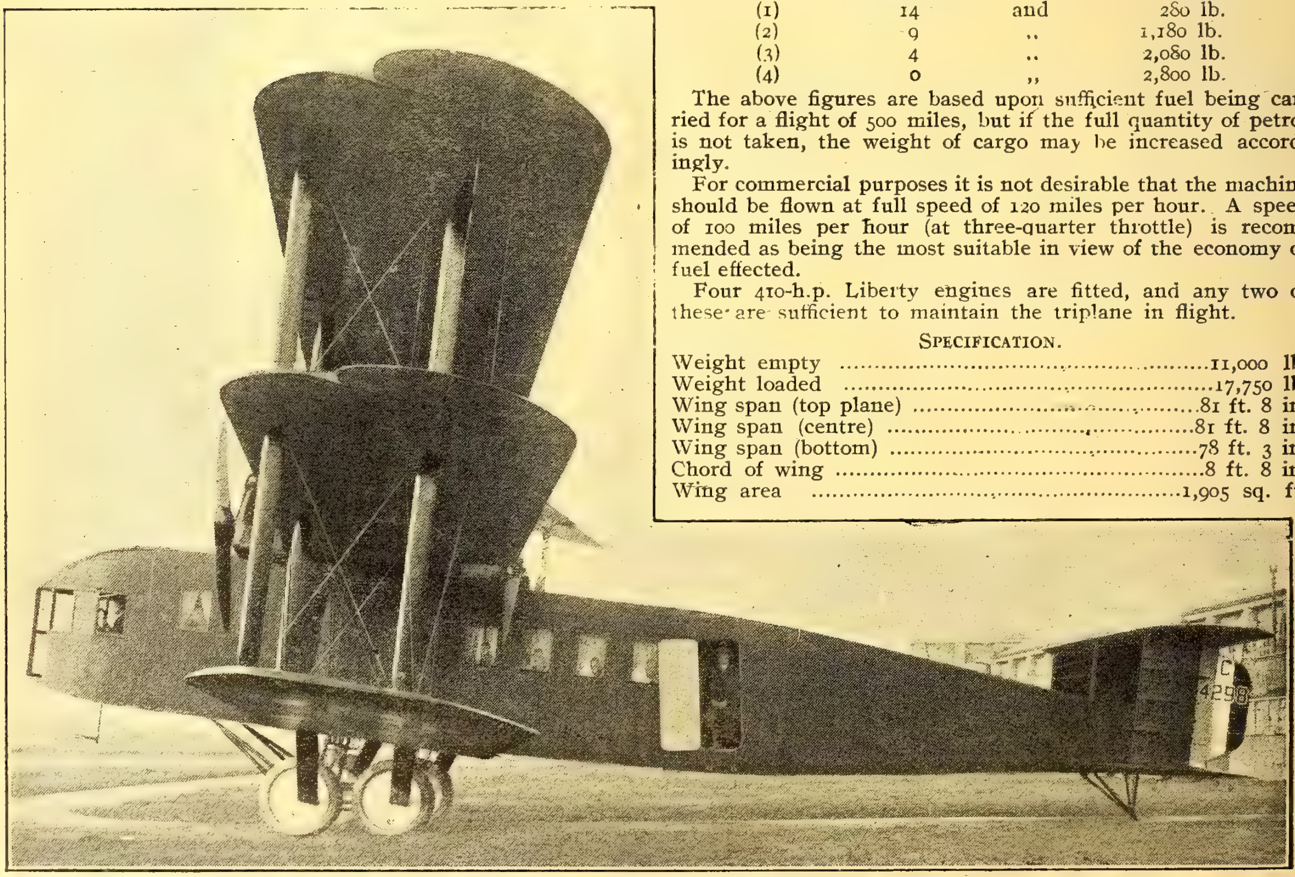
The above figures are based upon sufficient fuel being carried for a flight of 500 miles, but if the full quantity of petrol is not taken, the weight of cargo may be increased accordingly.

For commercial purposes it is not desirable that the machine should be flown at full speed of 120 miles per hour. A speed of 100 miles per hour (at three-quarter throttle) is recommended as being the most suitable in view of the economy of fuel effected.

Four 410-h.p. Liberty engines are fitted, and any two of these are sufficient to maintain the triplane in flight.

SPECIFICATION.

Weight empty	11,000 lb.
Weight loaded	17,750 lb.
Wing span (top plane)	81 ft. 8 in.
Wing span (centre)	81 ft. 8 in.
Wing span (bottom)	78 ft. 3 in.
Chord of wing	8 ft. 8 in.
Wing area	1,905 sq. ft.

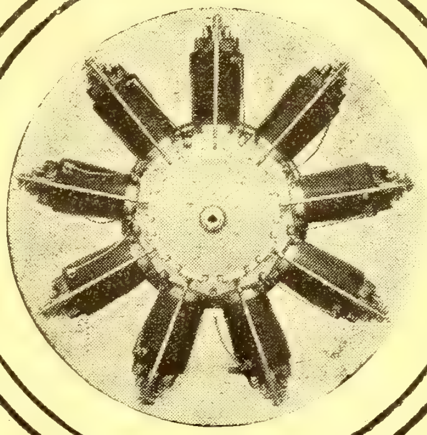


Side View of the Bristol "Pullman" (four 410-h.p. Liberty engines).

POWER

—an outstanding point in "the most efficient Aero Engine in the world"

ABC

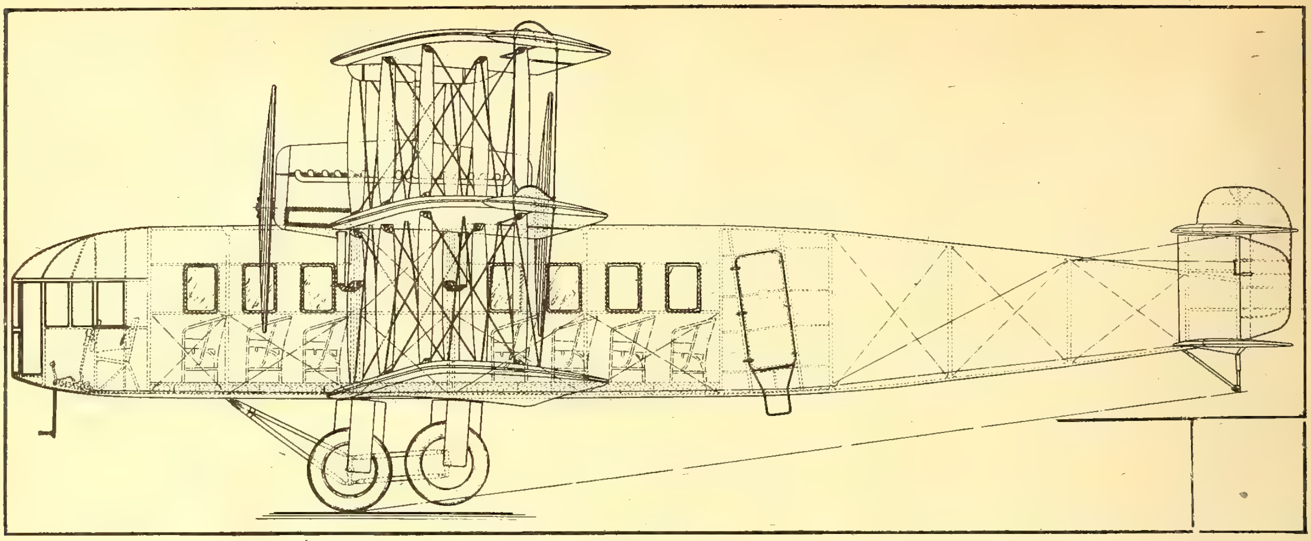


The Engine illustrated is the DRAGONFLY—340 h.p.—9 cyl. (Static Radial).

WALTON MOTORS, Ltd,
Walton-on-Thames.

Telephone:
ESHER 306 and 307.

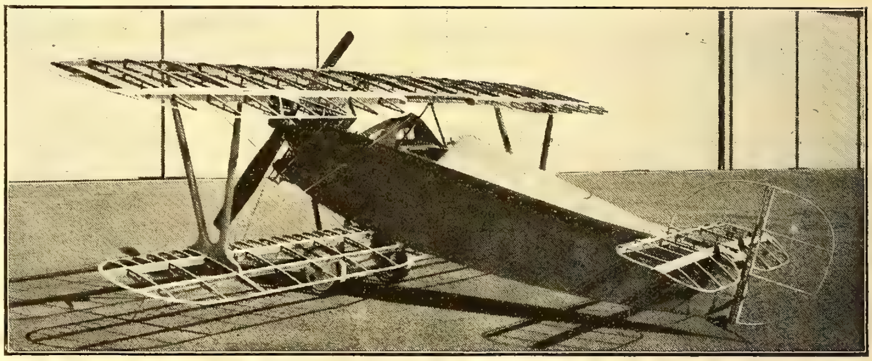
Telegrams:
"MOTORS, WALTON-ON-THAMES."



A Side Elevation of the Bristol "Pullman" Triplane (four 410-h.p. Liberty engines).

Wing loading	9.3 lb. per sq. ft.
Overall length	52 ft.
Maximum height	20 ft.
Petrol capacity	430 galls.
Maximum speed	125 m.p.h.
Cruising speed	100 m.p.h.
Landing speed	55 m.p.h.
Climb to 10,000 ft.	12 min.
Ceiling	15,000 ft.

THE BRISTOL "BABE."



The Bristol "Babe" in Skeleton Form.

The Bristol "Babe" has been constructed to meet the demand for a small single-seated aeroplane in which the costs of upkeep and the actual running costs are reduced to the absolute minimum.

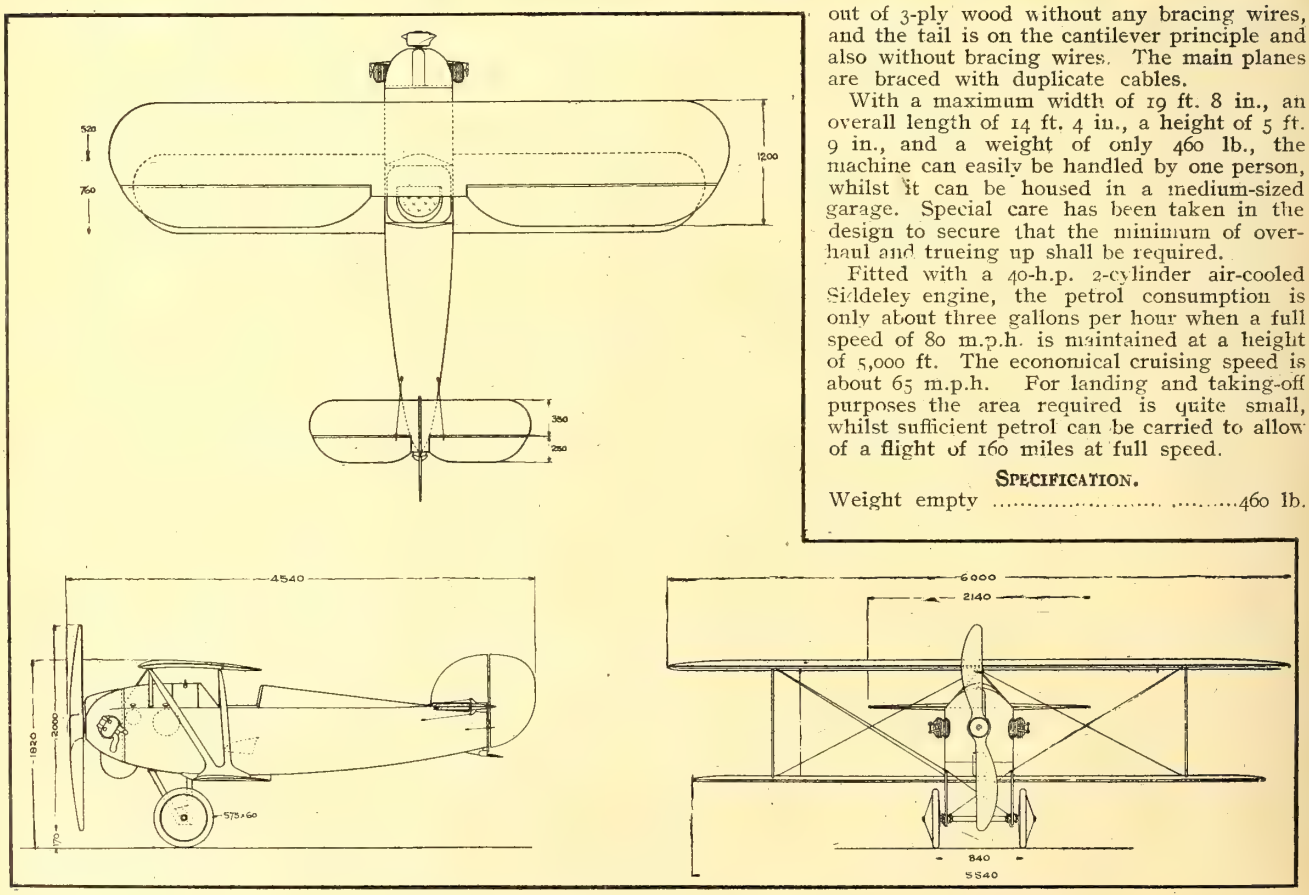
The fuselage is constructed throughout of 3-ply wood without any bracing wires, and the tail is on the cantilever principle and also without bracing wires. The main planes are braced with duplicate cables.

With a maximum width of 19 ft. 8 in., an overall length of 14 ft. 4 in., a height of 5 ft. 9 in., and a weight of only 460 lb., the machine can easily be handled by one person, whilst it can be housed in a medium-sized garage. Special care has been taken in the design to secure that the minimum of overhaul and trueing up shall be required.

Fitted with a 40-h.p. 2-cylinder air-cooled Siddeley engine, the petrol consumption is only about three gallons per hour when a full speed of 80 m.p.h. is maintained at a height of 5,000 ft. The economical cruising speed is about 65 m.p.h. For landing and taking-off purposes the area required is quite small, whilst sufficient petrol can be carried to allow of a flight of 160 miles at full speed.

Specification.

Weight empty	460 lb.



The Bristol "Babe" (40 h.p. Siddeley engine)

PUBLICATIONS.

The following books may be obtained *post free* by application to—

THE AEROPLANE & GENERAL PUBLISHING CO., LTD.,
61, Carey Street, W.C.2 :—

McCudden's "**Five Years in the R.F.C.**," **8s.**

Gill's **The Aerial Arm : Its Functions and Development. 7s.**

Butler's "**Plain Impressions,**" **2s. 9d.**

Sylvester's "**The Design and Construction of Aero Engines,**" **6s. 4d.**

Loening's "**Military Aeroplanes,**" **26s.**

Richthofen's "**The Red Air Fighter**" (2nd Edition), **3s. 9d.**

Mortane's **Special Missions of the Air** (Dropping Spies Behind the German Lines), **3s. 3d.**

Hume's **Nursairy Rimes, 2s. 9d.**

Blakeney's "**How an Aeroplane is Built**" (2nd Edition), **5s. 4d.**

Dixie's "**Air Navigation for Flight Officers,**" **11s.**

Saundby's "**Flying Colours**" (Popular Edition), **15s. 6d.** Edition de Luxe, **£2 2s.**

Barber's "**Aerobatics,**" **11s.**

Barber's "**The Aeroplane Speaks**" (7th Edition), **9s.**

Engineering Science, 4s.

All the World's Aircraft, 1919, £2 3s.

Barber's "**Airy Nothings,**" **3s. 9d.**

Aircraft Identification Book, 3s. 9d.

Aviation Pocket Book, 12s. 9d.

Songs of the Submarine, 2s. 3d.

Strength Materials, 12s. 6d.

Ballads of the Flying Corps, 2s. 9d.

Judge's **Design of Aeroplanes, 14s. 6d.**

Triplanes and Biplanes, 3s. 3d.

Practical Flying, 5s. 4d.

Selwyn's **Aeroplanes and Airships, 2s.**

"**The £ S D of Flying**" (Commercial Aviation and Its Possibilities). By Captain Arthur Swinton, **6s. 4d.**

Internal Combustion Engines, 15s. 6d.

Selwyn's **Metric Conversion Tables, 2s. 9d.**

Properties of Aerofoils, 18s. 6d.

"**The Revelations of Roy,**" Air Mechanic (With Apologies to Artemas), **1s. 3d.**

"**The Aeroplane,**" Vols. XIII, XIV, XIV, **25s.** net each

"**The Aeroplane,**" Vols. IX, X, XI, XII, **21s.** net each.

XMAS PRESENTS.

THE most acceptable present is a good book. Ever increasing costs of production have compelled publishers to advance all book prices.

The *Aeroplane* for the current week proposes to reverse the process.

Copies of any of the following books will be sent at two-thirds the published price:—

	Published Price.			Terms till Dec. 24th.		
THE MOST BEAUTIFUL FLYING BOOK—						
Capt. Saundby's Flying Colours	£	s.	d.	£	s.	d.
Edition de luxe	2	2	0	1	8	0
Popular Edition		15	0		10	0
THE MOST HUMAN OF FLYING RECORDS—						
Major McCudden's "Five Years in the R.F.C."		7	6		5	0
THE MOST AMUSING OF PARODIES— (A delightful book for children of the .A.F.)						
Major Hume's "Nursairy Rimes"		2	6		1	10
THE MOST THRILLING OF AEROPLANE RECORDS— (Dropping spies behind the German lines).						
Mortane's "Special Missions of the Air"		3	0		2	0
THE STORY OF GERMANY'S GREATEST AIR FIGHTER—						
Richthofen's "Red Air Fighter"		3	6		2	4
THE SIMPLEST AUTHORITATIVE ACCOUNT OF AIRCRAFT DEVELOPMENT AND POLICY						
Col. Gill's "The Aerial Arm"...		6	6		4	4

Thus for Half-a-Guinea readers of the *Aeroplane* may secure—

Nursairy Rimes ... ... (2/6)
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Five Years in the R.F.C. ... (7/6)
Flying Colours ... ... (15/-)

or 11/- half-a-dozen copies of
Nursairy Rimes.

or for £1 four copies of
Five Years in the R.F.C.

or for 7/- three copies of
The Red Air Fighter.

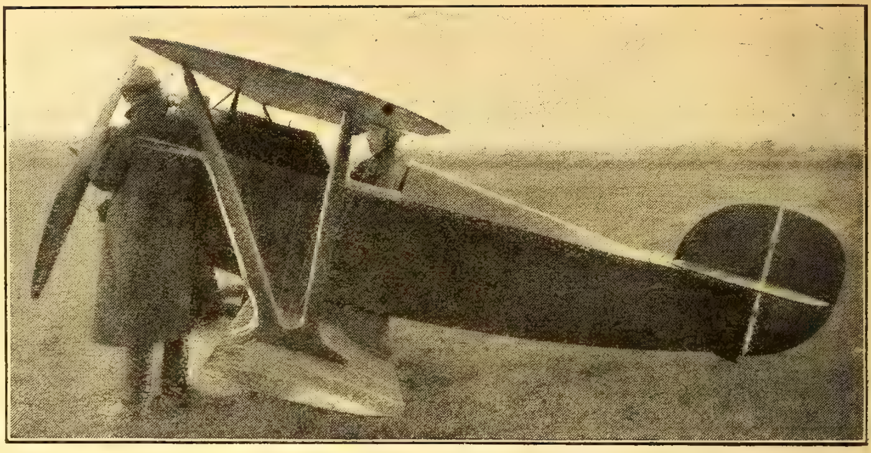
This is the best way to get a supply of books for Christmas presents on the most favourable terms.

Orders should reach us if possible before Wednesday next to ensure delivery by Christmas Day.

The AEROPLANE, 61, Carey Street, W.C.2.

Weight loaded	683 lb.
Wing span (top wing)	19 ft. 8 in.
Wing span (bottom)	18 ft. 8 in.
Chord of wing (top wing)	3 ft. 11¼ in.
Chord of wing (bottom wing)	2 ft. 6 in.
Wing area	107.8 sq. ft.
Wing loading	6.34 lb. per sq. ft.
Overall length	14 ft. 11 in.
Maximum height	5 ft. 9 in.
Tankage (petrol)	6.5 gallons.
Speeds—	
Best speed at 5,000 ft.	80 m.p.h.
Cruising speed at 5,000 ft.	65 m.p.h
Landing speed	40 m.p.h.
Ceiling	10,000 ft.

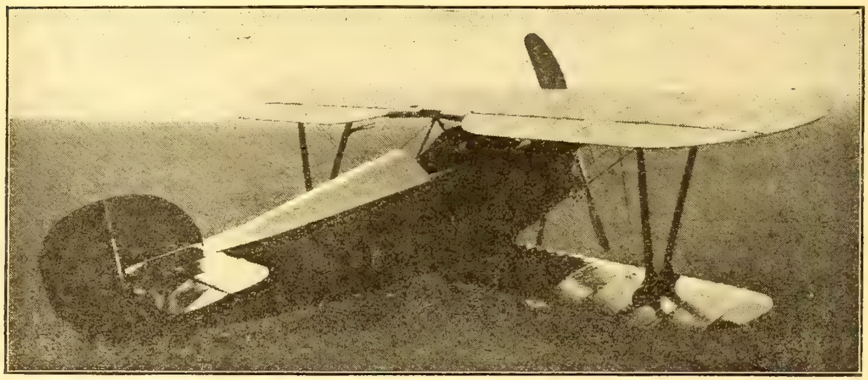
Shipping Measurements.—This machine can be shipped complete in one case measuring 6 ft. by 6 ft. by 21 ft.



Side View of the Bristol "Babe."

THE BRISTOL "BULLET."

This single-seater machine is designed primarily for racing purposes and is fitted with a 450-h.p. Cosmos "Jupiter" air-cooled radial engine. Exceptional strength is the outstanding feature in the design, and to attain this object double spars are fitted throughout, even in the wings and tail. As a result any evolution can be carried out with perfect safety at the maximum speed of 160 miles per hour.



Three-quarter Rear View, the Bristol "Babe."

Specification.

Weight empty	1,700 lb.
Weight loaded	2,300 lb.
Wing span (top wing)	31 ft. 2½ in.
Wing span (bottom)	29 ft. 2½ in.
Chord of wing (top wing)	5 ft. 11 in.
Chord of wing (bottom)	4 ft. 11 in.
Wing area	294.6 sq. ft.
Wing loading	7.82 lb. per sq. ft.
Overall length	24 ft. 1 in.
Maximum height	9 ft. 8 in.
Petrol capacity	50 gallons.
Performance :—	
Best speed	160 m.ph.
Landing speed	50 m.p.h.

THE BRISTOL "TOURER."

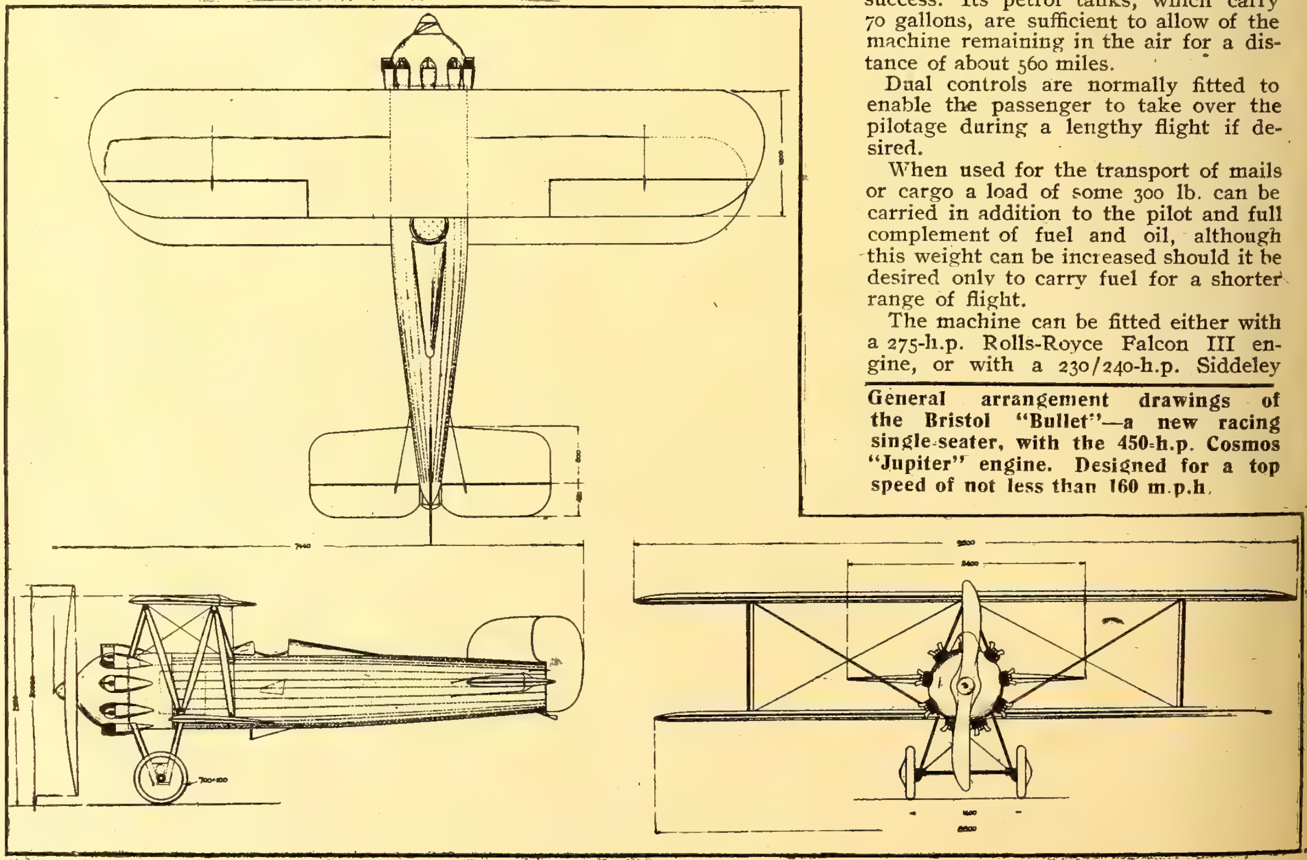
Amongst the post-war products of the British and Colonial Aeroplane Co. is the two-seater machine hereafter described.

Designed primarily to provide a machine of great dependability and capable of maintaining a fairly high speed for a considerable period of time, the "Bristol" Tourer has proved a great success. Its petrol tanks, which carry 70 gallons, are sufficient to allow of the machine remaining in the air for a distance of about 560 miles.

Dual controls are normally fitted to enable the passenger to take over the pilotage during a lengthy flight if desired.

When used for the transport of mails or cargo a load of some 300 lb. can be carried in addition to the pilot and full complement of fuel and oil, although this weight can be increased should it be desired only to carry fuel for a shorter range of flight.

The machine can be fitted either with a 275-h.p. Rolls-Royce Falcon III engine, or with a 230/240-h.p. Siddeley

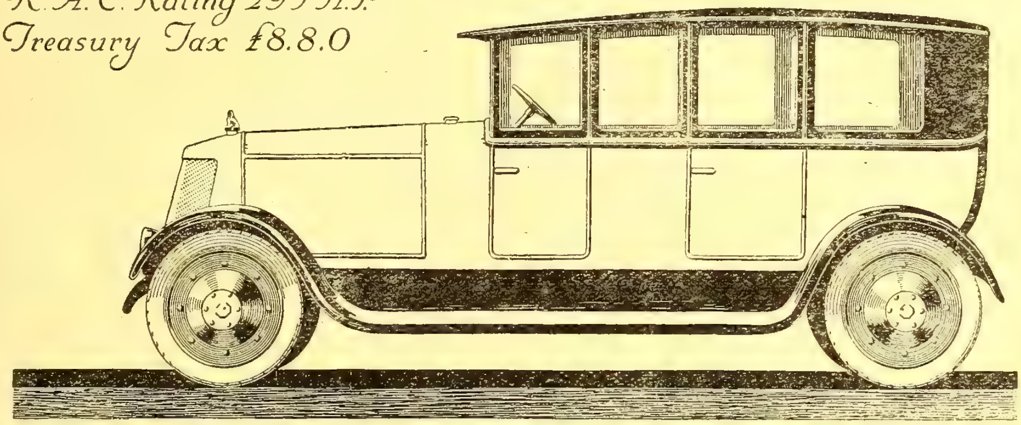


General arrangement drawings of the Bristol "Bullet"—a new racing single-seater, with the 450-h.p. Cosmos "Jupiter" engine. Designed for a top speed of not less than 160 m.p.h.

The ARMSTRONG SIDDELEY

Six Cylinder Car

R.A.C. Rating 29·5 H.P.
Treasury Tax £8.8.0



Saloon Double Phaeton (as illustrated) £1,000.

A Famous Motorist's Opinion.

"FROM one end to the other of the chassis, everything is made as well as it can be. . . . . . . To sum up, this 29·5 h.p. six-cylindered Armstrong Siddeley is a true after-war car, selling at prices (according to the coach work fitted) about one-half those quoted for many other chassis of equivalent engine power, which may or may not be as good jobs. They cannot be better. The price of £720 for the chassis, with a full complement of fittings, is the best evidence I have yet seen of a really courageous effort by a great firm, showing real confidence in their ability to make profits at this price in the future, when they have justified a really gigantic British output.

This car is right."

S. F. EDGE,
From the "Auto." Nov. 28th. 1919.

PUBLIC opinion at the Olympia Show unanimously endorsed our statement that you cannot buy a better car than the new Armstrong Siddeley 6-cylinder. It is a motor carriage of high efficiency, stately appearance, and ample power—constructed of the best materials. ℂ It is light. It is comfortable. It is dependable. It runs smoothly, silently and easily managed. Maintenance costs are small. ℂ Three years' free inspection. ℂ You cannot buy a better car.

PRICE *of* CHASSIS EQUIPPED WITH	Disc Wheels and one Spare Rim; four 820 × 135 Rubber Studded Tyres; Specially Designed Wings, Scuttle Dash with instrument board; Lucas Engine Starter and Electric Lighting, complete with 5 lamps, Mechanical Tyre Pump, Kit of Tools, etc.	£720

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Formerly the Siddeley-Deasy Motor Car Co., Ltd.
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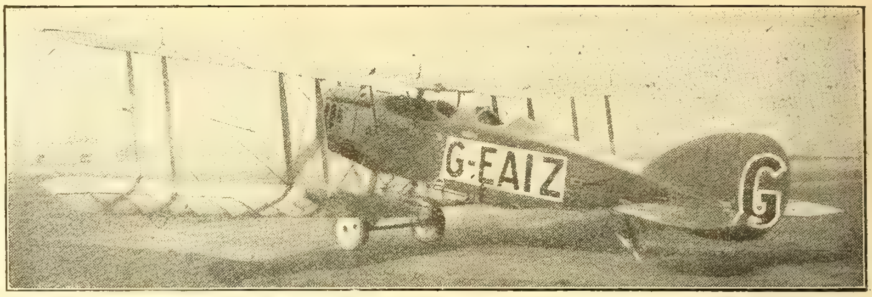
You cannot buy a better Car.

Godbold's

"Puma" engine. Fitted with the former, the machine can attain a speed of about 125 m.p.h., with a normal cruising speed of about 90 m.p.h. When the latter engine is fitted the maximum speed is 120 m.p.h., and the cruising speed 85 m.p.h.

With either engine the petrol consumption for the distance traversed is the same although the consumption with the Rolls-Royce engine is 15½ gallons per hour, and with the Siddeley "Puma" 15 gallons per hour.

In the construction of this machine the Bristol Co. have arranged to make use of a large stock of materials and parts which were left on their hands by the cancellation of war contracts. The machine has been designed to utilize many components which are also part of the famous Bristol "Fighter," and it is thus possible to put the machine on the market at the extremely low price of £1,200, and to undertake to give rapid deliveries.



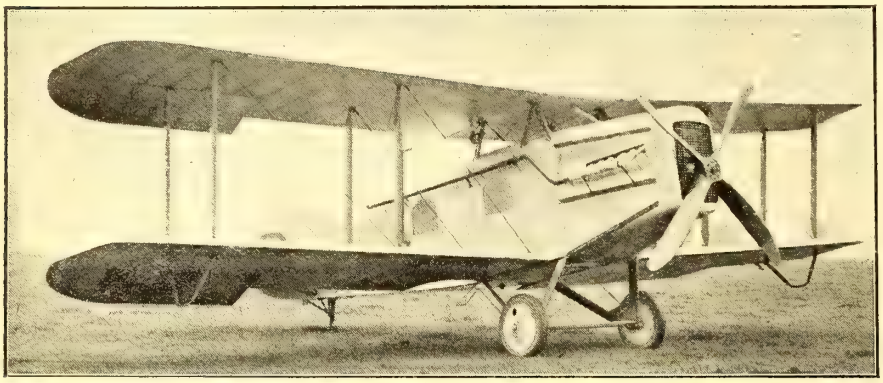
The Bristol "Tourer" (230-h.p. Siddeley "Puma" engine).

SPECIFICATION.

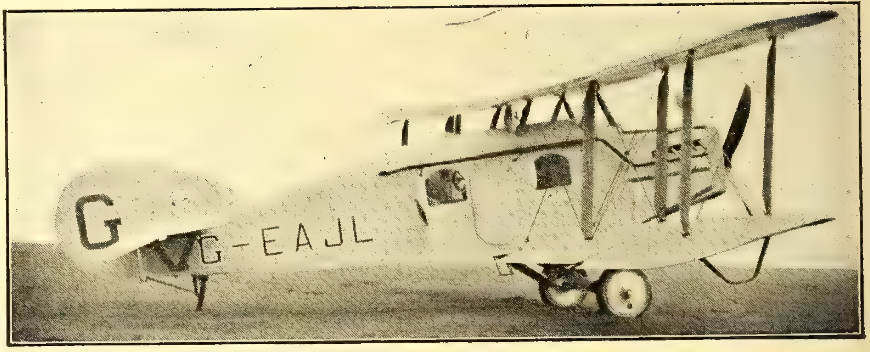
Weight (empty)	1,750 lb.
Weight (loaded)	2,800 lb.
Wing span	39 ft. 3 in.
Wing area	405 sq. ft.
Wing loading	6.92 lb. per sq. ft.
Chord of wing	5 ft. 6 in.
Overall length	25 ft. 9 in.
Maximum height	10 ft. 1 in.
Tankage (petrol)	70 gall.
Ceiling	20,000 ft.

THE WESTLAND AIRCRAFT WORKS.

The Westland "Limousine," described in its first edition in THE AEROPLANE of Aug. 13th, 1919, has been in continuous service in the firm's own interest since July and has flown many thousands of miles, giving extremely satisfactory results. Experience therewith has suggested only a few minor modifications for later editions of the machine, and the sample which the firm are exhibiting on their stand at the Paris Aero Show differs in no important way from the original. The Paris Show machine is to be fitted up for passenger travel, and like its predecessor will be most comfortably, and even luxuriously, appointed. The upholstering of the cabin will be in grey Bedford cord, and the colour scheme throughout is grey and aluminium.



Three-quarter Front View of the Westland "Limousine."



Side View of the Westland "Limousine" (Rolls-Royce "Falcon" engine).

The adjustable ventilators fitted to the cabin admit air through a diffuser box and gauge inlets, thus securing fresh air without draughtiness.

Hot-water pipes, supplied from the cooling-water system of the engine, are arranged to warm the cabin, and valves, accessible to the passengers, permit of temperature regulation by more or less "byepassing" the heater pipes. In addition to this machine the Westland Co. are to show a scale model of the "Limousine" fitted for mail-carrying, and a section of the "Limousine" cabin showing the method of construction.

During the Show the original "Limousine" will be stationed at Le Bourget aerodrome, and will serve to show how well this type of machine stands up to hard work.

Both the Westlands are to fly from Yeovil to Paris, and the firm hope to carry the whole of their exhibition material on the two machines themselves, without the aid of any other form of transport.

WM. BEARDMORE AND CO., LTD.

Those who are past the first bloom of youth may remember the Eastern King of musical comedy fame who claimed he "could do almost anything." His claim was doubtless exaggerated, but even if it be allowed *in toto* more westerly concerns need not unduly humble themselves before him.

William Beardmore and Co., Ltd., judging from the record of their war products, not only can do, but appear to actually have done, almost everything—at any rate, everything that comes within the realms of engineering.

The major portion of their activities concerns this journal little, but amongst the offshoots of their activities the aeroplane and airship sections have a very direct importance.

In war time Beardmore's built B.E.2cs, Wight seaplanes, Nieuport two-seaters, Beardmore folding ships' scouts, Sopwith "Camels" and Handley Pages of the V/1500 type.

In addition they have designed a number of highly satisfactory machines of their own types.

BATH AIRCRAFT, LTD.

With the transition from war to peace it is extremely fortunate that many of the smaller aircraft firms who have been principally engaged in the manufacture of components and parts of aircraft, such as wings, struts, floats, propellers, etc., are sufficiently far-seeing not to banish aeroplanes from their future programme of production.

One of these firms is the Bath Aircraft, Ltd., of Lower Bristol Road, Bath, who, during the war were compelled to concentrate on components to meet the demand, with the result that they were unable to carry out their original intention of turning out complete machines.

With the completion of Government contracts, they are keeping their staff together by turning their attention to the manufacture of all kinds of woodwork, such as joinery, furniture, fancy goods, etc., for which their shops and machinery are eminently suited, and thereby maintaining themselves in readiness to re-enter the aircraft market at the earliest possible date.

Round the world by Air

—is mainly a question of organization and choice of flying stock.

As to the second factor, the B.A.T. Company can be of unusual assistance. For instance, we are the first people out with a purely commercial model (not a modified war type)—the B.A.T., F.K. 26—the machine with the largest cargo space and load capacity for its overall size and power yet produced.

Here are some interesting points concerning F.K. 26 :—

Engine — *Rolls-Rogce Eagle VIII.*

Speed—*45-120 m.p.h.*

Cabin—*Is clear of any transverse cross-bracings or other obstructions and measures 8 ft. by 3 ft. 3 in. by 6 ft.—this in a machine of only 33 ft. overall length. Direct entry off ground through ordinary door.*

Load—*With 600 miles range of fuel—2,000 lbs.*

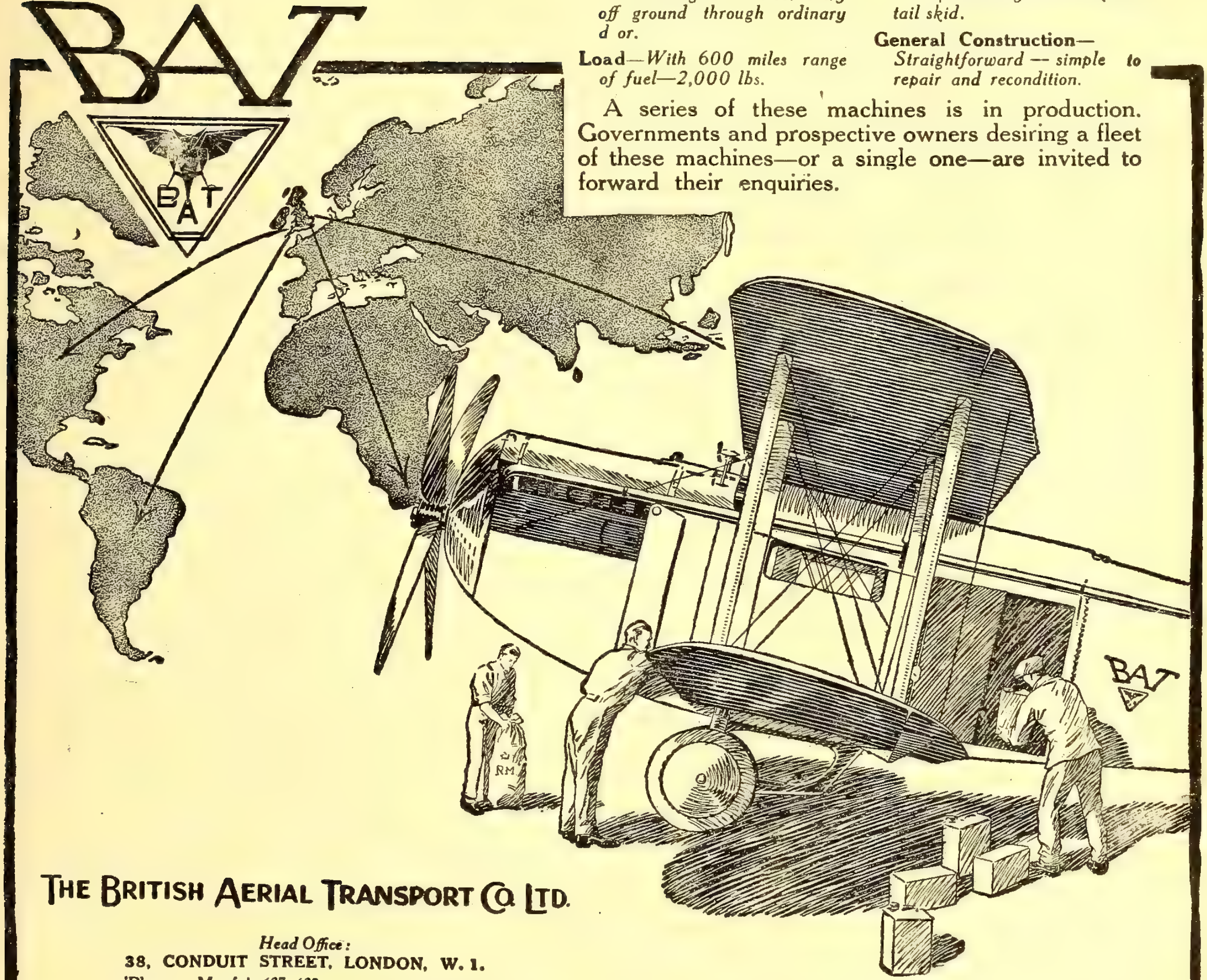
Fuel Cost at full load—*7·2 pence per mile.*

Chassis—*A sturdy job, sprung by an unique combination of oleo and rubber shock absorbers.*

Tail—*Can be trimmed in flight from pilot's seat — steerable and practically unbreakable tail skid.*

General Construction—*Straightforward — simple to repair and recondition.*

A series of these machines is in production. Governments and prospective owners desiring a fleet of these machines—or a single one—are invited to forward their enquiries.



THE BRITISH AERIAL TRANSPORT Co. LTD.

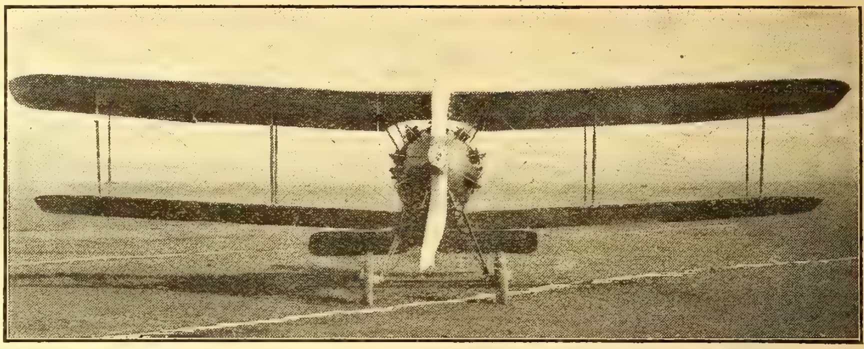
Head Office:
38, CONDUIT STREET, LONDON, W. 1.
'Phone: Mayfair 637, 638.
Telegrams: "Batigram, Reg, London."

THE AUSTIN MOTOR CAR CO., LTD.

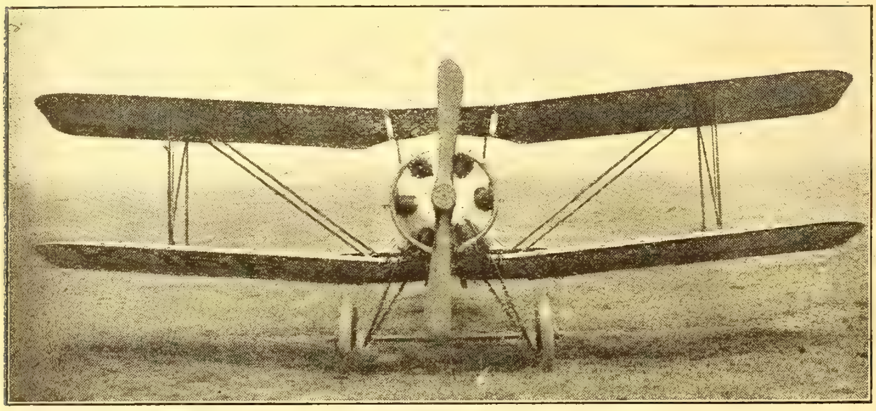
As is fairly well known, during the war the Austin Motor Car Co., Ltd., of Birmingham, devoted their whole energies to the quantity production of munitions of war of various kinds, with conspicuous success.

Amongst their products aeroplanes and aeroplane engines figured to no small extent, and their output of standardised aeroplanes of various types was extremely large.

In addition the firm were responsible for the design of quite a number of machines which gave uniformly excellent results on trial.


The Austin " Greyhound " (A.B.C. 320-h.p. " Dragonfly " engine).

Amongst war machines their latest product—the " Greyhound," fitted with the A.B.C. "Dragonfly" engine—is now under official test, and is understood to be giving an extraordinarily fine performance.


Front View of the Austin "Whippet" (45-h.p. Anzani engine).

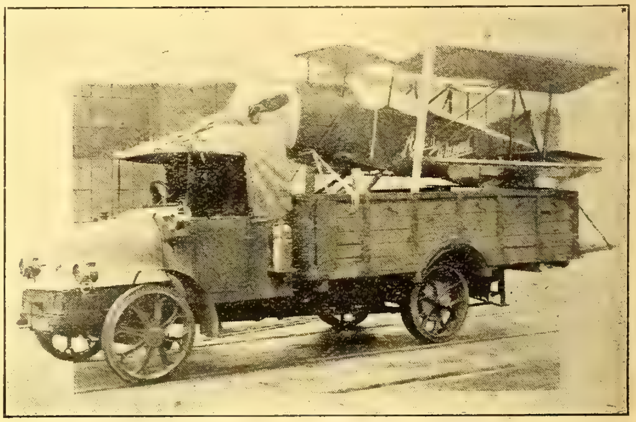
Austins do not, however, propose to limit their aircraft activities to the military needs of the future, but have produced in the "Whippet" a machine which should appeal strongly to the sporting pilot as a private mount.

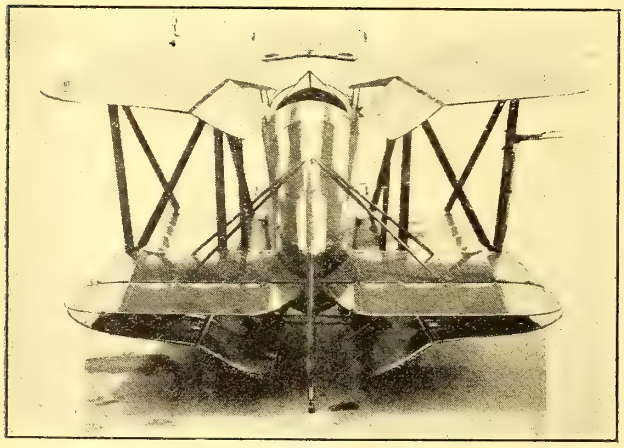
The "Whippet" is a small single-seater of 21 ft. 6 in. span, 16 ft. 3 in. long overall, and 7 ft. 6 in. height, weighing 580 lb. empty and 810 lb. fully loaded. Fitted with a 5-cylinder "Anzani" engine of 50 h.p., the machine has a speed range of from 35 to 85 miles per hour and climbs to 5,000 ft. in 10 min. It is easy to fly and sufficiently strong for all "stunting" purposes.

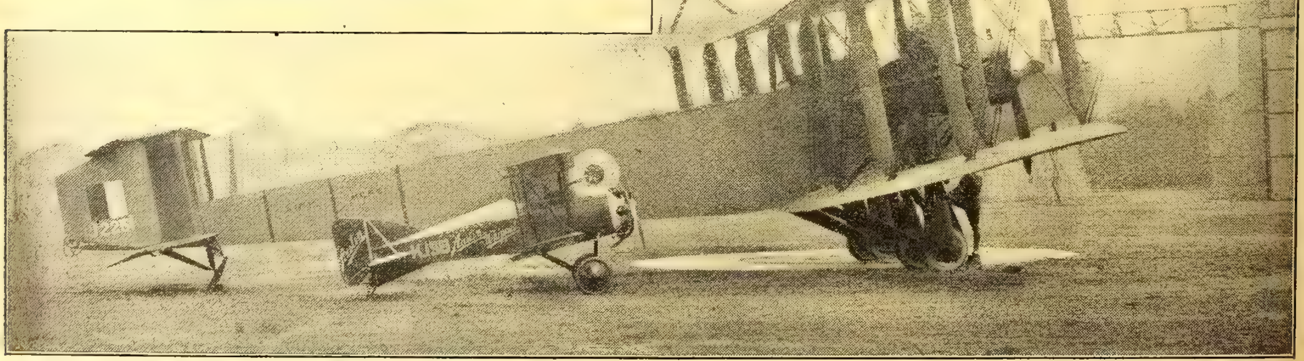
The fuselage is entirely built of steel tubes, without welded joints.

The wings are designed to a factor of safety of seven and follow nomal practice. They are arranged to fold back along the fuselage, where they are clipped automatically by appropriate catches. Interplane struts are of steel tubes in N form, and, instead of bracing wires, diagonal steel tubes which act as tension members in flight and struts when on the ground are employed. There are thus no wing bracing wires to stretch and there is no "trueing up" required.

Compartments for tools and luggage are fitted beneath the pilot's seat, which is excellently upholstered and


The " Whippet " packed for transport.


The " Whippet " Folded.


The Long and the Short of it—the Austin " Whippet " alongside an Austin-built Handley Page O/400.

THE AIRCRAFT MANUFACTURING COMPANY LIMITED
AIRCO
HENDON. LONDON. N.W.9.

This wonderful view of the Admiralty Arch and Trafalgar Square was taken by one of the Firm's photographers, from an Airco 9B. Machine. All Airco Pictures are works of Art shewing the beauty of the earth from above.

Write for full particulars—

**Dept. A7a,
AIRCRAFT
MANUFACTURING
CO., LTD.,
HENDON,
N.W.9.**

Designers and Manufacturers of the **famous de Havilland** or **Airco Aeroplanes**, also **Flying Boats** and **Seaplanes.**

Aerial Photography

"THE BIRD'S EYE VIEW."

THE Aircraft Manufacturing Co., Ltd., is creating another record. Its Aerial Photographic Department has only been in existence for three months and has already sold over a *Quarter of a Million* pictures.

Airco Aerials are the best in the world, because only the best Pilots, Machines, Photographers and Cameras are employed.

¶ **Have your factory photographed from the air.** The **Airco** will shew your Works to advantage.

¶ **See that an Aerial of the Municipality is hanging on the walls of the Council Chamber.** It will shew the Town *en masse*, in all its grandeur.

¶ **Your country house would make a wonderful enlargement.** An Airco Aerial will shew not only the building but the whole Estate.

¶ **Real photographic postcards** of all the **beauty spots in England as seen** from an **Airco** Machine.

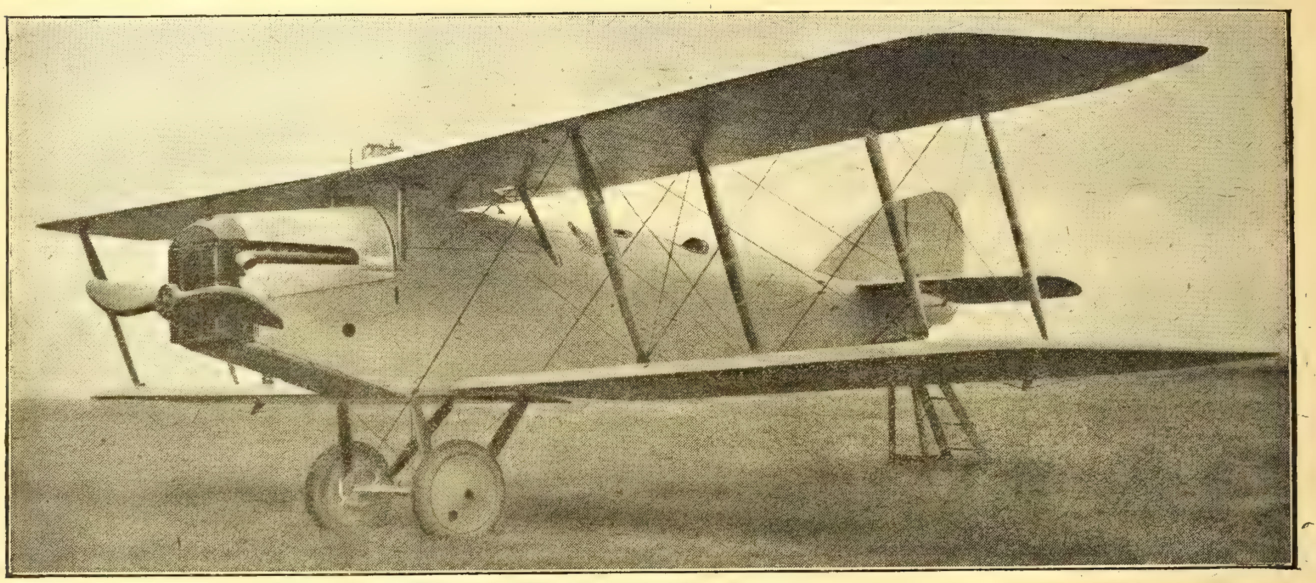
On Sale in every Town.

Photographic Aeroplanes sent to all parts.

adequately wind screened. The design of the machine has been submitted to the Air Ministry and a certificate of airworthiness has been issued in respect of the machine.

Throughout the design strength and permanence has been given the premier place, and no undue sacrifice has been made at the altar of cheapness, but in spite of this fact the price of the machine complete is only £500.

MARTINSYDE, LTD.



The Type "A" Martinsyde in its Australian guise.

The firm of Martinsyde, Ltd., needs little introduction to regular readers of this paper. Since the earliest days of British aviation they have occupied a foremost place amongst the ranks of British aircraft constructors.

During 1910, '11, '12, and '13 Martinsyde monoplanes held their place as the most graceful and most beautifully constructed of British aircraft, and their flying qualities were on a level with their construction.

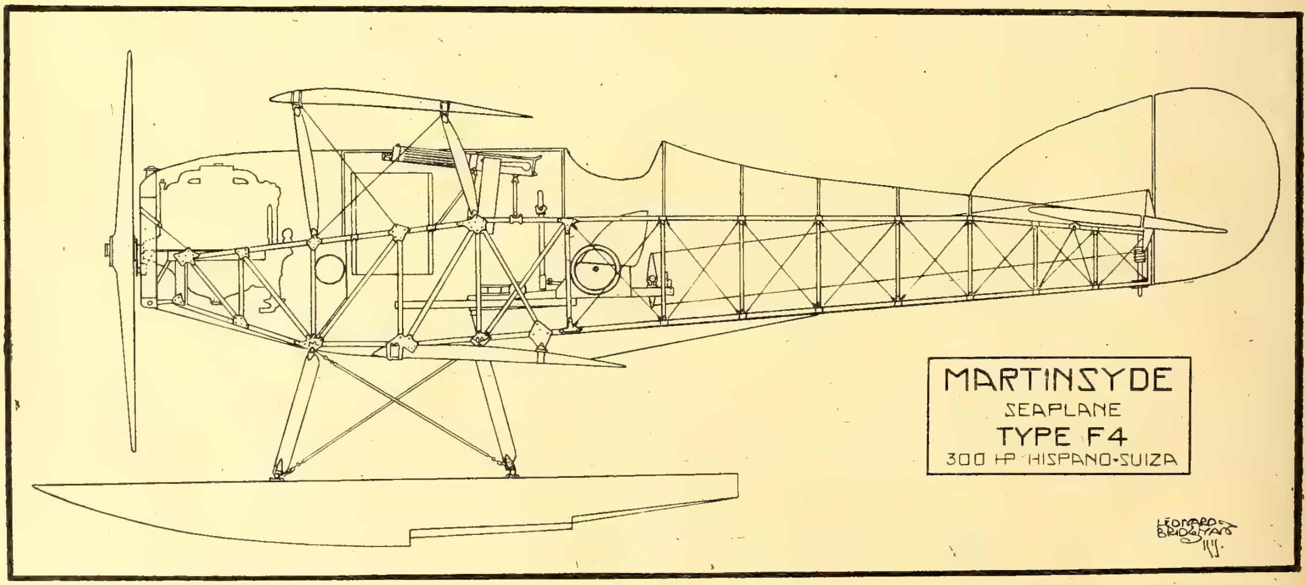
During the war the Martinsyde "Scout," "Elephant," F.3, and the F.4—designed for war purposes, though the latter was not available till after the Armistice, thanks to engine supply difficulties—added to the firm's reputation.

Since the war the firm have produced the type A, designed for commercial transport work in various forms, and more recently the F.6.

The first machine of the F.6 type has but recently been completed. This machine is very similar to the F.4 in general design and appearance, except for one or two minor details in the arrangement of interplane and undercarriage struts. The machine is a two-seater and is fitted with a 300-h.p. Hispano-Suiza engine. Whereas in the F.4 the centre section struts slope outwards from the fuselage to the top centre section with the front pair of struts vertical, as viewed from the side, and the rear pair sloping down from the centre section towards the tail, in the F.6 all four struts are staggered in line with the other two pairs of interplane struts, and regarded from the front are vertical and parallel. Similarly, in the F.6, the interplane struts do not slope outwards but are parallel with the centre section struts.

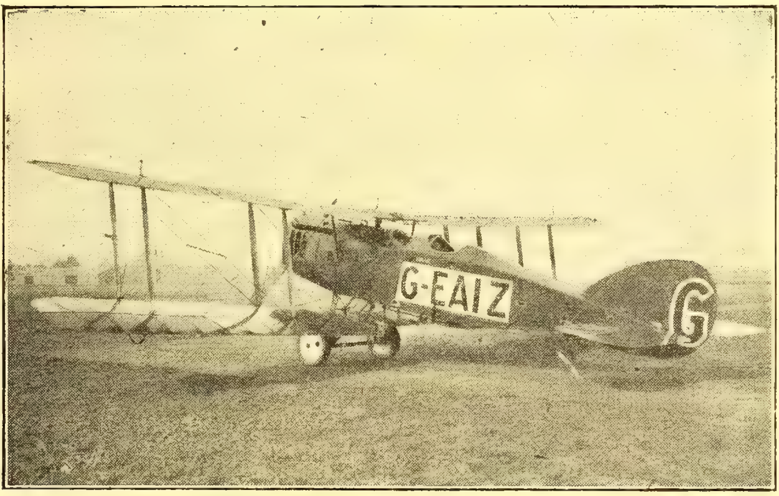
In the undercarriage, instead of the struts forming the "Vees" being set at equal angles to the vertical, as in the F.4, the front pair of struts are vertical, while the rear pair are set back from the axle at an angle of 15 deg. There is no dihedral angle to the top plane, and a very slight one to the bottom plane. Many of the F.4s are being converted to two-seaters, extra room in the fuselage being provided by the removal of ammunition chutes, machine guns and fittings, and other "gadgets" extraneous to peace-time aeroplanes.

The attached table gives full particulars of the present-day products of the firm.



The Pioneers of British Aircraft Construction

invite you to inspect the latest types of "BRISTOL" Aircraft on **STAND 65** at the Paris International Aircraft Exhibition. Details of their exhibits will be given in these pages during this and succeeding weeks.



The "BRISTOL" Tourer follows very largely the lines of the renowned "BRISTOL" Fighter. Fitted with a 230/240 h.p. Siddeley "Puma" engine the Tourer has a speed of 120 miles per hour, and a range of 560 miles.

This machine is now being offered at the exceedingly low price of TWELVE HUNDRED POUNDS.

£1,200

The "Bristol" Aeroplanes.

THE
BRITISH & COLONIAL
AEROPLANE CO., LTD.,
FILTON—BRISTOL.

Telegrams: "Aviation, Bristol."
Telephone: 3906 Bristol.

PARTICULARS OF MARTINSYDE MACHINES.

	Type "A" (Passenger).	Type "A" (Freight).	Type "A" (Freight). 1,000 miles range.	Type F.4.	Type F.6.
Span of Wings — Top	43ft. 4in.	43ft. 4in.	43ft. 4in.	32ft. 9⅜in.	31ft. 11¼in.
Span of Wings — Bottom	43ft. 4in.	43ft. 4in.	43ft. 4in.	31ft. 2⅜in.	29ft. 4in.
Length Overall	29ft. 1¼in.	29ft. 1¼in.	29ft. 1¼in.	25ft. 5⅝in.	24ft. 6in.
Height without Airscrew	10ft. 6in.	10ft. 6in.	10ft. 6in.	8ft 10in.	9ft. 1½in.
Chord of Wing — Top	6ft. 6in.	6ft. 6in.	6ft. 6in.	6ft. 0½in.	6ft. 0½in.
Chord of Wing — Bottom	6ft. 6in.	6ft. 6in.	6ft. 6in.	5ft. 6¼in.	5ft. 6¼in.
No. of Seats (passenger)	4	—	—	—	1
Engine	Standard. 275 H.P. Rolls-Royce Falcon Alternative. 450 H.P. Napier Lion	Standard. 275 H.P. Rolls-Royce Falcon Alternative. 450 H.P. Napier.	Standard. 275 H.P. Rolls-Royce Falcon. Alternative. 450 H.P. Napier Lion.	300 H.P. Hispano-Suiza	275 H.P. Rolls-Royce Falcon or 300 H.P. HispanoSuiza
Freight capacity	500 lbs. plus 4 passengers	1,300 lbs.	800 lbs.	2 Vickers' guns, ammunition and bombs	—
Water	6 gallons	6 gallons	6 gallons	3½ gallons	3½ gallons
Fuel	80 gallons	104 gallons	164 gallons	38 gallons	52 gallons
Oil	8 gallons	8 gallons	10 gallons	4 gallons	6¾ gallons
Crew — Military M/c.	Pilot	Pilot and Passenger	Pilot and Passenger	Pilot	Pilot and Passenger
Crew — Commercial	Pilot	Pilot	Pilot	—	Pilot
Loading in lbs. per square feet	7¾ lbs.	7¾lbs.	7¼lbs.	7 lbs.	7¼ lbs.
Ditto in lbs. per B.H.P.	With "Falcon" engine. 14½ lbs. With "Lion" engine. 9 lbs.	"Falcon." 14½ lbs. "Lion." 9 lbs.	"Falcon." 14½ lbs. "Lion." 9 lbs.	7½ lbs.	"Rolls-Royce" 8¼ lbs. "Hispano Suiza" 7½ lbs.
Speed at Ground level	125	—	—	145 m.p.h.	
Speed at 6,500 feet	123	—	—	144 m.p.h.	
Speed at 10,000 ,,	118	—	—	142½ m.p.h.	As single seater approx. same as F.4.
Speed at 13,000 ,,	No data	—	—	139½ m.p.h.	
Speed at 15,000 ,,	—	—	—	136½ m.p.h.	
Speed at 16,500 ,,	—	—	—	134 m.p.h.	
Speed at 19,500 ,,	—	—	—	127½ m.p.h.	
Climb to 6,500 feet	— — —	— — —	— — —	Full war load. 4 mins. gross weight 2,289 lbs.	do. do.
Climb to 10,000 ,,	—	—	—	6 mins. 40 secs.	do. do.
Climb to 13,000 ,,	—	—	—	9 mins. 30 secs.	do. do.
Climb to 15,000 ,,	—	—	—	11 mins. 45 secs.	do. do.
Climb to 16,500 ,,	—	—	—	13 mins. 40 secs.	do. do.
Climb to 19,500 ,,	—	—	—	18 mins. 30 secs.	do. do.
	(With "Falcon" engine)	("Falcon")	("Falcon")		
Commercial speed at 6,500 feet	100 m.p.h.	100 m.p.h.	100 m.p.h.	—	—
Landing speed	40 m.p.h.	40 m.p.h.	40 m.p.h	40 m.p.h.	40 m.p.h.
Endurance in hours	5½ hours	7 hours	11 hours	3½ hours	4½ hours
Range in miles	500 miles	750 miles	1,200 miles	350 miles max.	450 miles
Service ceiling	Approx. 16,000 feet	—	—	25,000 feet	—
Maximum ceiling	No data	—	—	27,000 feet	—

NOTE.—F.6 can be produced either as a two-seater passenger or reconnaisance machine or as a single-seater fighter. When fitted as a single-seater the performance is similar to the F.4. Both F.4 and F.6 as single-seaters can carry an additional load of 400 lbs., and bomb racks to take this can be supplied.

* * *

GEORGE PARNALL AND CO., LTD.

During the war the firm of Parnall and Sons of Bristol acquired an excellent reputation as manufacturers of aircraft to official specification, and so favourably impressed the powers that were with their workmanship that Mr. Harold Bolas of the Admiralty Air Department was released to them as a designer, and the firm was asked to undertake original design work.

At least one of their designs, the "Panther," reached the production stage—which, considering the late date at which they entered the designing field, and the difficulties attendant upon the production of a shipboard aeroplane, redounds distinctly to their credit.

The firm of Parnall and Sons has since then come under the proprietorship of W. and T. Avery, Ltd., and has definitely abandoned the production of aircraft.

Mr. Geo. G. Parnall has, however, organised the firm of Geo. Parnall and Co., and with the assistance of a personnel largely composed of those who conducted the aircraft department of Parnall and Sons, will carry on the business of aircraft designers and constructors.

At the moment the firm is occupied entirely with work on designs which have received the approval of the Air Ministry for military purposes, particulars whereof they are not at liberty to publish.

Mr. Harold Bolas is acting as the firm's designer, and Mr. Parnall is to be congratulated upon his courage and enterprise in initiating such a business at this time, and upon the success with which his efforts have so far been attended.

* * *

A RESULT OF PEACE.

An application was made to Mr. Justice Astbury in the Chancery Division on Dec. 2nd by the Sopwith Aviation and Engineering Co., Ltd., for sanction to alter the objects of the company in order to enable them to manufacture motor vehicles, all kinds of furniture, and other articles.

"CELLON"

BEFORE

DURING

AFTER

THE WAR

has maintained its reputation of being

"The Dope of Proved Efficiency"

for Naval, Military and Commercial Purposes.

Full particulars and Quotations
on application to

CELLON (Richmond) Ltd.,
22, CORK STREET,
LONDON, W.1.

Telegrams—"Ajawb, Reg. London."

Telephones—Gerrard 440 (2 lines).

THE AIRCRAFT MANUFACTURING CO., LTD.

WITHOUT doubt, one of the most interesting exhibits at the Paris Salon, from an international standpoint, is that of the Aircraft Manufacturing Co., Ltd., Hendon, N.W.9 This firm is the producer of all the de Havilland machines that operated throughout the war.

Capt. de Havilland, O.B.E., A.F.C., R.A.F., the chief of the design staff, stands unique inasmuch as every type of machine built, for which he was responsible, has been a success. No other firm can boast of so many different successful machines. The de H.1, 1A, 2, 3, 4, 5, 6, 9, 9A, and 10 have all proved themselves formidable offensive weapons.

The reader might be tempted to ask what became of the de H.7 and 8. These machines were never built. Not that they would not have been a success if they had materialised, but because the urgent demand at that period of the war was for another type, and the de Havilland 9 had to be pushed ahead of them.

In the case of the Airco 16 machine, exhibited at the Paris Show, this is really a de Havilland 16 machine. Merely the name Airco (an abbreviation of Aircraft Manufacturing Co.) has been substituted, it being considered a better commercial nomenclature.

The public have an opportunity for the first time of inspecting the Airco 16 on this stand in its new form. In many respects it is like the well-known machine which flies daily between Paris and London. But a Napier "Lion" engine has been installed, and with the increase in horse-power one finds a corresponding and highly gratifying increase in its performance.

By reason of its somewhat unconventional shape the installation of the Napier engine has caused a modification in the general appearance of the nose of the machine.

An ingenious method of shielding the radiator (which is placed under the engine) has been embodied, the shutters following the line of the body so that, when closed, an uninterrupted flow of air is the result, save for a small projecting area deemed advisable for effective cooling even at great altitudes.

The success of the Airco 16 is only what should have been expected of it, because it is the outcome of the famous de Havilland 9A which distinguished itself to such a marked degree in the war. The 9A was not only used for reconnaissance and fighting, but as a long-distance, self-defending, daylight bomber, and this type carried thousands of tons of bombs over the Hun lines and dumped them on the Rhine towns. The 9a surely went a long way towards the downfall of the Boche.

As a machine possessing such high qualities as the 9a, but redesigned and turned to commercial use, the Airco 16 is daily proving its value by its constant journeyings to and fro on the London-Paris route in all weathers.

One has but to look up the Flying Intelligence Records of the Aircraft Transport and Travel, Ltd. (who have so far found nothing better for the work in hand than Airco machines) to realise its immense value as a peace-time air transport.

THE AIRCO 16 AT THE PARIS SHOW.

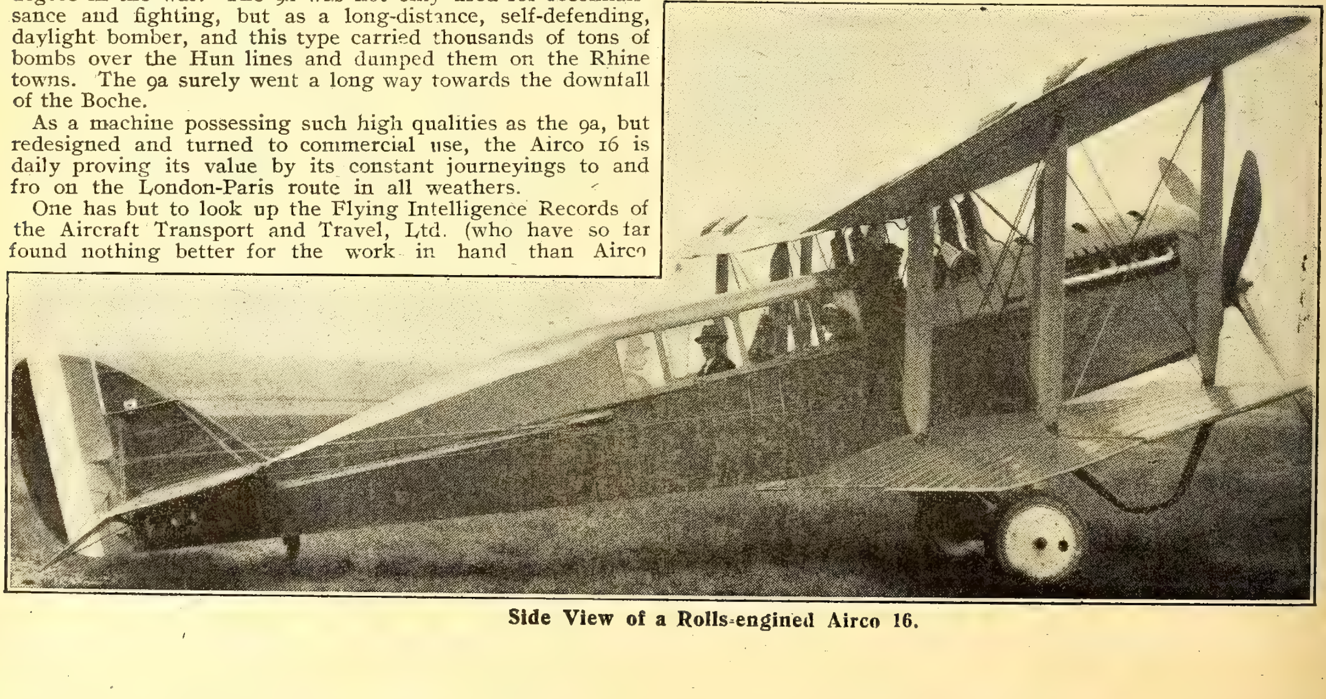
The fuselage, including the outside of the cabin, is enamelled white and is very highly finished. The cowling is polished aluminium. The usual V-type undercarriage is fitted and is painted black. The cellule and empennage are cream colour.

Almost all the fittings, including the long exhaust extension pipes, are nickel-plated. The remainded are black to match the undercarriage and tail-skid.

The cabin has almost a "boudoir" effect and is quite "futuristic" in its colour scheme—but at the same time it is quite practical and is furnished with durable material. Briefly stated, the top half of the cabin, which is hinged so that it will slide over for access and egress, is upholstered very similarly to a coach-built autocar, and is equipped with lighting set and a small circular trap-door for communicating with the pilot. Ventilation is afforded through holes in the roof, but the windows, too, are arranged to slide over one another so that they may be opened or shut from the inside.

Embarcation on an Airco 16.

So far as the cabin is concerned, comfort has been the



Side View of a Rolls-engined Airco 16.

SUNBEAM-COATALEN AIRCRAFT ENGINES

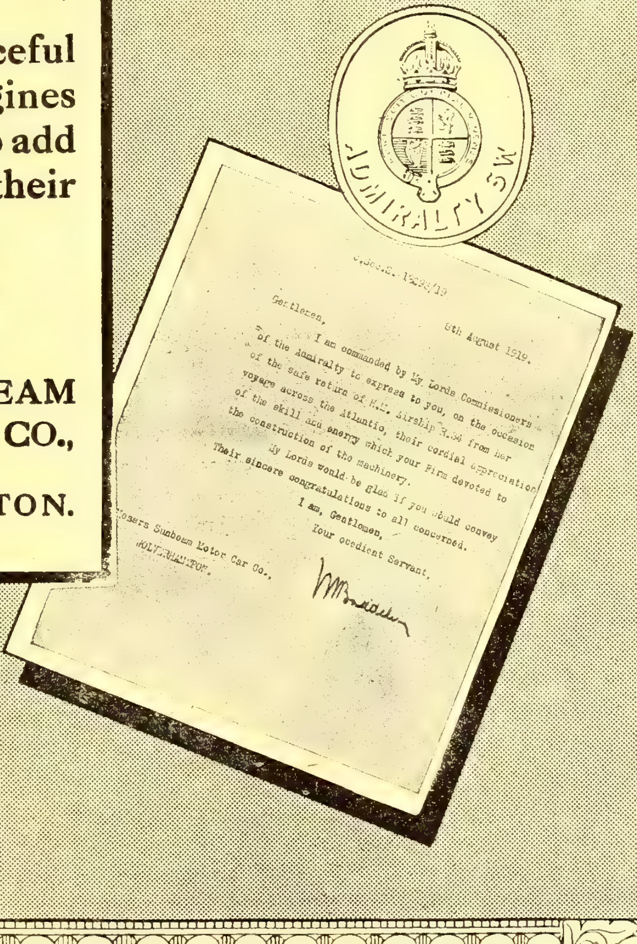
contributed in no small measure to the aerial supremacy which was largely responsible for the Victory which crowned the Allied arms.

And in peaceful times, these Engines will continue to add to the fame of their name.

■ ■

■

THE SUNBEAM MOTOR CAR CO., LTD., WOLVERHAMPTON.



C.Sec.S. 1[illegible]/19

Gentlemen, 8th August 1919.

I am commanded by My Lords Commissioners of the Admiralty to express to you, on the occasion of the safe return of H.M. Airship R.34 from her voyage across the Atlantic, their cordial appreciation of the skill and energy which your Firm devoted to the construction of the machinery.

My Lords would be glad if you would convey Their sincere congratulations to all concerned.

I am, Gentlemen,
Your obedient Servant,

Messrs Sunbeam Motor Car Co.,
WOLVERHAMPTON.

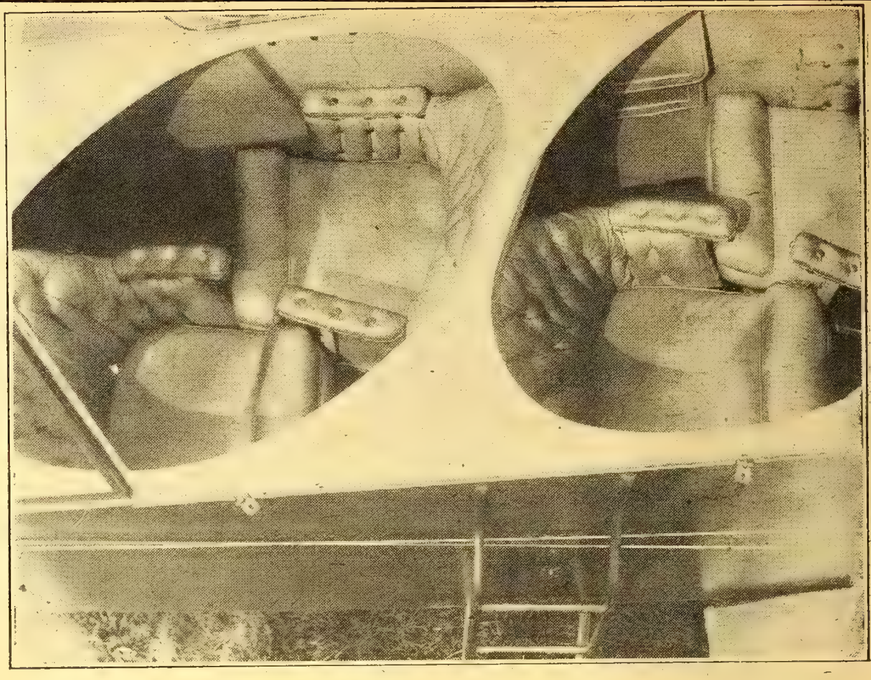
chief object in the mind of the designers. Black rugs and seats covered with a black material are provided, and bright peacock-green pillows. The lower sides of the machine are covered in a highly coloured ultra-modern scheme which, coupled with the pillows, gives just that touch of richness that befits a machine finished for exhibition purposes.

The cabin holds four persons, two looking forward and two towards the tail. By staggering the seats ample arm and leg room is provided; in fact, it can be safely asserted that so far as comfort is concerned it is ahead of the average automobile.

The machine is fitted with a two-way wireless telephony outfit by the Marconi's Wireless Telegraph Co., Ltd. With it the pilot can talk over a range of 100 miles and can receive audible messages up to the same distance. The weight of the outfit complete is only 60 lb.

The apparatus consists of:
- (a) Generator.
- (b) Aerial and winch.
- (c) Remote control and transmitter.
- (d) Receiver.

The generator is fitted conveniently on the port side of the machine, and is operated by means of a small windscrew.


View downwards into the cockpit of an Airco 16 Passenger-carrier.

From a geared winch, suitably mounted in the pilot's cockpit to facilitate winding, is fitted the trailing aerial. This can be let out at will, whilst receiving and speaking.

A control panel is fixed on the dashboard by means of which the pilot can tell that his set is radiating and also close the field of his air-driven generator supplying the high-tension circuit.

As a freight or mail carrier this aeroplane has still further advantages. Baskets have been designed and constructed which strap over in place of the movable top half of the cabin. The seats are easily removed and the "hold" so formed becomes a storage place for freight.

In addition to the white 16, the Airco displays a large model of the Hendon Aerodrome, showing their works.

A small section of the stand is devoted to aerial photography, a new branch of the firm's interests.

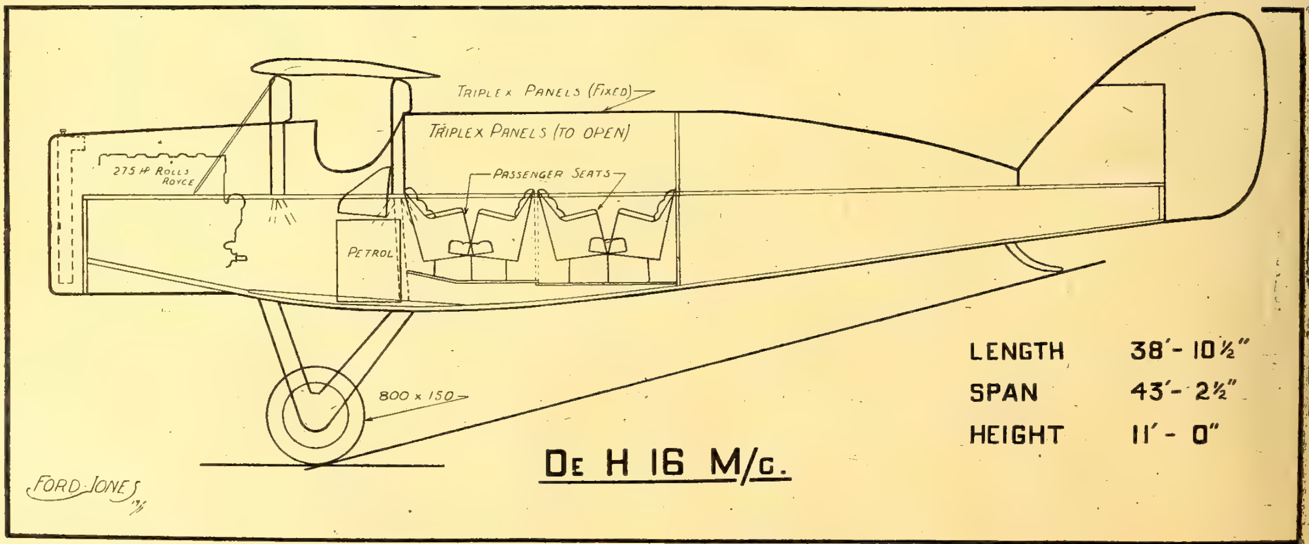
Here one not only sees many of the machines flying—as they were caught by the photographer in another Airco machine—but a few of the many views of places of historic interest and beauty are also exhibited.

The Airco photographic department is specialising in the photographing of factories from the air, and by so doing are enabling firms to get a more artistic and also more accurate representation of their works than the old conventional method of a very uninteresting sketch.

Owing to its vast resources, it is understood that the Airco have facilities for the manufacture of parts of any type of foreign machine, either experimental or in quantities, by special arrangement.

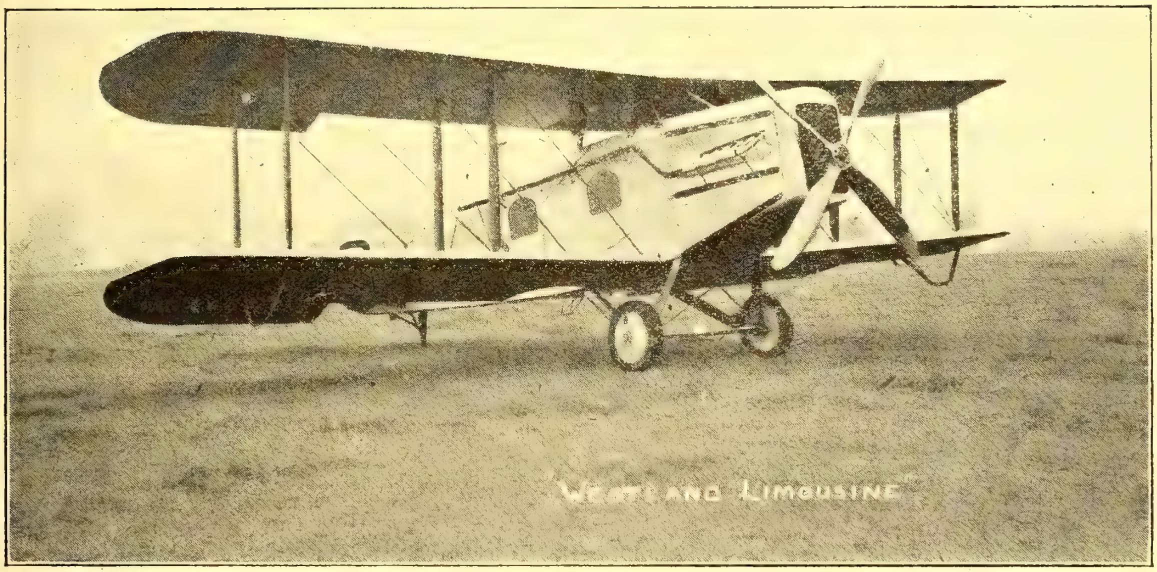
PERFORMANCE OF THE AIRCO 16.

Duty.	Engine.	H.P. at 2,200 Revs. at	Speed at 5,000 ft.	Climb to 10,000 ft.	Ceiling Absolute.	Endurance Full Speed at 5,000 ft.	Crew.	No. of Passengers.	Freight.		Weight Empty.	Weight Fully Loaded.
									Cubic Contents.	Lbs.		
Passenger Machine	Napier	500	127	12 mins.	20,000 ft.	400 miles	1 pilot	4	—	—	With water 3,077 lbs.	4,645 lbs.
Freight or Mail	Napier	500	127	12 mins.	20,000 ft.	400 miles	1 pilot	—	84½ cub. ft.	990	3,077 lbs.	4,645 lbs.



De H 16 M/c.

WESTLAND



If you are visiting the Paris Aeronautical Exhibition we shall be pleased to show you the Westland "Limousine" on Stand 20.

We shall also have another machine at Le Bourget Aerodrome for giving demonstration flights.

Above is illustrated the model we intend to exhibit. The first machine, which has been flying since last July, has proved an ideal machine for mail carrying or passenger transport-de-luxe.

For full particulars and arrangements as to trial flights apply to our London Representative, **Lieut.-Colonel C. H. MEARES,** c/o MESSRS. PETTERS LIMITED, 6, DEAN'S YARD, WESTMINSTER, LONDON, S.W.1.

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STRIKING RECORD

of AIRCO Successes

The following are a few of the remarkable achievements of Airco machines during the present year.

ALTITUDE RECORD.

Established by an Airco 9 Military machine, fitted with Napier "Lion" Engine, January, 1919.

AERIAL DERBY, 1919.

Airco Machines finished **FIRST, THIRD** and **FIFTH.**

AMERICAN AERIAL DERBY.

An Airco 4 **WON** this race over a Course 1042 miles in length, averaging throughout a speed of 136 miles per hour. The **SECOND** and **THIRD** places were also secured by Airco machines.

INTERNATIONAL RACE, AMSTERDAM.

Airco Machines **WON FIRST** and **SECOND** Speed Prizes.

NEW SPEED RECORD.

On November 15th an Airco 9R, with a Napier "Lion" Engine, established a new British speed record of 149.43 miles an hour. It also flew 250 miles, without alighting, at an average speed of 145.44 miles an hour.

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Flying Boats..

THE
SUPERMARINE
CHANNEL TYPE
FOUR SEATER
FLYING BOAT

illustrated above has been designed and constructed by THE S.A.W., Ltd., Southampton, and passed for sea and air worthiness by the British Air Ministry. We have standardised this machine, which is fitted with folding wings, 160 H.P. Beardmore engine, and the latest and most up-to-date improvements in marine aircraft. We are using this model for our FLYING BOAT Passenger Service on the South Coast. Demonstration flights will be given by arrangement. Enquiries are invited for these machines, which we have ready complete for shipment to any part of the world. We are prepared to act as consultants to give advice as the result of our experience on the establishing of a Flying Boat Passenger Service. A FLYING BOAT Passenger Service is the best paying proposition to-day in Civil Aviation.

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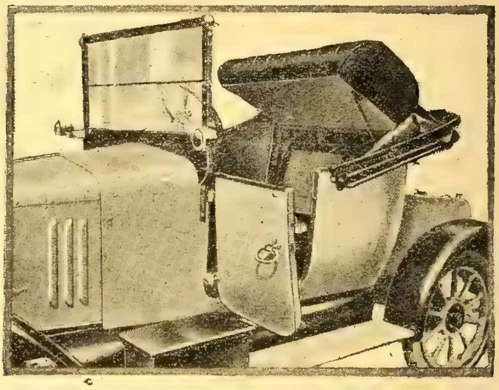

Note the method of packing away the patent side curtains (which open with the door behind the back cushion.

Godbolds R 8

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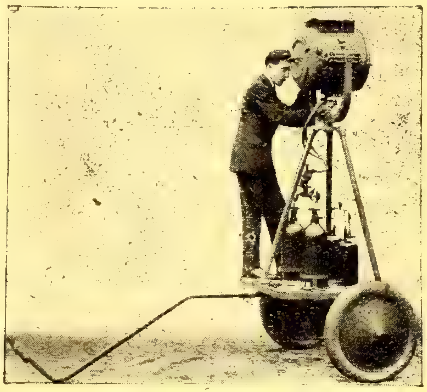

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SHORT BROTHERS, LTD.

There was a time in the history of aviation in England when the terms "Short" and "seaplane" were almost interchangeable. The war impetus to the production of sea-going aircraft eventually led to the existence in fair quantity of seaplanes of other makes, but Short Bros. can always claim a very large share in the pioneer work of seaplane development, and their vast experience in this respect places them in a position to meet the needs of present day conditions.

For commercial work and civilian flying the seaplane stands at a considerable advantage as compared to the land machine at the present time.

In the first place there is no question of the preparation of chains of landing grounds, since the seaplane flying across water is itself an appliance equipped specially for alighting on that which is beneath it.

Secondly, war seaplanes have been developed with characteristics much more akin to those directly needed for commercial work than are those of the war aeroplane. Seaplane design has advanced further in the direction of providing machines capable of carrying large useful loads at reasonably high speeds over long distances with reasonable safety and reliability, and have not been afflicted by the necessity of an immense speed of climb and a high ceiling, and thus the war seaplane is more nearly a ready-made commercial machine than is its land-going equivalent.

Then, too, the seaplane has only to compete with shipping with a maximum speed of about 20 miles per hour, instead of with railway transport at a much higher speed, and can therefore save time at quite moderate flying speeds, and consequently at a low cost.

It is therefore not surprising that Short Bros are still devoting their attention to seaplane construction, and the "Cromarty" boat and the "Sporting" seaplane hereafter described may be considered as typical examples of practical commercial aircraft.

THE CROMARTY FLYING BOAT.

The Cromarty Flying Boat was originally designed for operating with the Fast Cruiser Squadron. This service necessitated its staying away from its base for long periods, consequently it possesses the following :—(a) Long range, i.e., big load capacity; and (b) great strength in order to be able to alight and rest in mid ocean.

These features make the machine specially suitable for commercial work, the former allowing for great variation in the load—range factor.

The latter feature is most important from the commercial point of view. The machine can not only take off and alight in rough water, but can safely be moored out in slightly protected harbours, thus economising greatly in shed accommodation, and particularly in labour for handling.

It will be noticed that this machine is extraordinary for its large load capacity, which is shown in the following table :—

Range.	Duration.	Fuel per hour.	Economical speed.	Maximum commercial load.
270 mls. ...	3 hrs. ...	60 galls. ...	90 m.p.h. ...	*5,632 lbs.
540 mls. ...	6 hrs. ...	60 galls. ...	90 m.p.h. ...	3,796 lbs.
990 mls. ...	11 hrs. ...	60 galls. ...	90 m.p.h. ...	1,280 lbs.

*Crew of 3 only.

As a war machine it carries long-distance wireless, a big anti-submarine gun, and bombs.

In its commercial aspect the machine can be fitted to take passengers or freight. Arrangements have been made by which the passenger seating can be quickly removed, thus giving additional space for the carriage of goods.

The engines fitted are of the most reliable type, and the risk of engine failure is very small, provided proper care is taken of the engines.

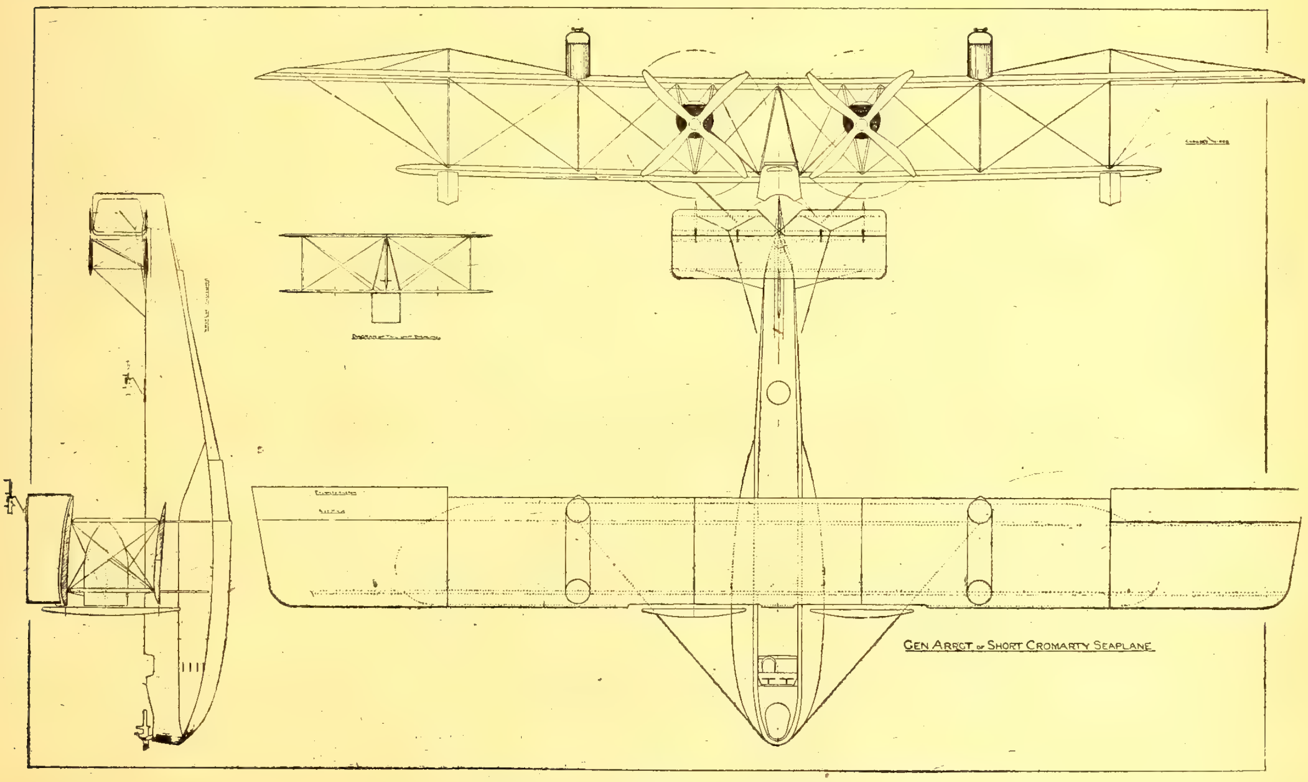
Great attention is also being paid to the comfort of passengers; the passengers' compartment will be heated, the engines will be silenced as much as possible, and a good view will be provided.

Specification.

Type, "Cromarty" large twin-engined flying boat.
Engines, 2 Rolls-Royce of 600 h.p. each.
Span, 112 ft.
Length overall, 60 ft.
Height overall, 23 ft.
Crew, 5.
Probable full speed, 96 miles per hour.
Probable economical speed, 90 miles per hour.
Fuel Consumption :—
At full speed—Petrol, 77 galls. per hour.
Oil, 8 galls. per hour.
At economical speed—Petrol, 60 galls. per hour.
Oil, 6 galls. per hour.
Load capacity, 7,708 lbs.
Fuel for 6 hours' flight at economical speed, 90 m.p.h. :—

Petrol (360 galls.)	2,592 lbs.	
Oil (40 galls.)	360 lbs.	
Reserve water (6 galls)	60 lbs.	
Crew of 5	900 lbs.	—3,912 lbs.
Available weight for passengers, etc.....		3,796 lbs.
18 passengers at 160 lbs. each	2,880 lbs.	
Luggage at 50 lbs each	900 lbs.	—3,780 lbs.

Range under above conditions, 540 miles.



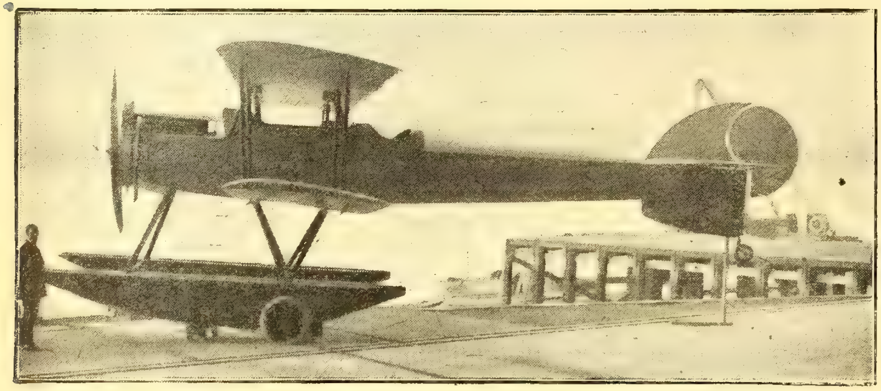
The Short "Cromarty" Flying Boat.

THE SPORTING TYPE SEAPLANE.

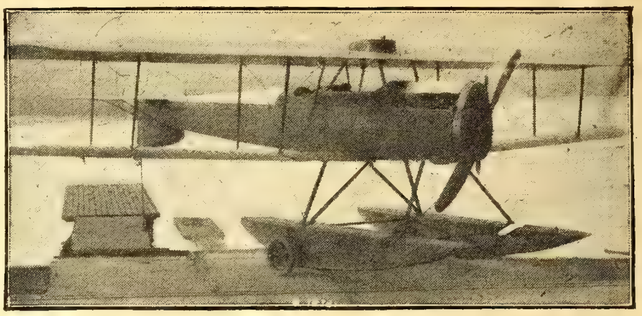
The Short Sporting Type Seaplane is designed as a general utility machine. The functions it will fill are numerous, and for convenience can be described under two headings—Military and Commercial.

Military.—As will be seen from the specification, accommodation is provided for pilot and three passengers. The seating arrangements are: The two front seats are tandem fashion and are provided with dual control, the rear seats being side by side. Thus it will be possible to carry out tuition work not only in flying, but in gunnery, wireless, photography and bombing. For these latter, pilot, instructor and pupil can be accommodated, plenty of room being provided in the rear seats for wireless, guns or cameras. The view from the rear seat is excellent, and good arcs of fire are obtained. For the above work the machine is fitted with a 160 h.p. "Beardmore" engine, as a high performance is not required and economy in fuel is very necessary.

For war work, or where a high performance is desired, the Siddeley Puma engine of 240 h.p. is installed. This engine fits the machine without any alteration, this being one of the features of the design.



Side View of the Sporting Type Short.



The Sporting Type Short (160-h.p. Beardmore engine).

The enormous advantage of having one machine and only one type of spare for tuition and war work is obvious.

By a neat arrangement of fittings, the seaplane chassis can be quickly taken off and a land chassis fitted in a few minutes.

Commercial.—The commercial values of the Sporting Type do not need explanation. For tuition, passenger work, or the transport of small quantities of freight the machine is most suitable.

The machine is designed on the standard lines of the world-famous Short seaplanes, and therefore embodies all those important details of construction which have been evolved during seven years of hard experience.

The machine is made to fold into small compass by means of the Short Patent Folding Wing System, which permits the machine being housed in a shed of very small dimensions.

To beach the machine an axle is passed through prepared holes in the floats, wheels are attached each end, and the machine can then be handled by two or three men with great ease.

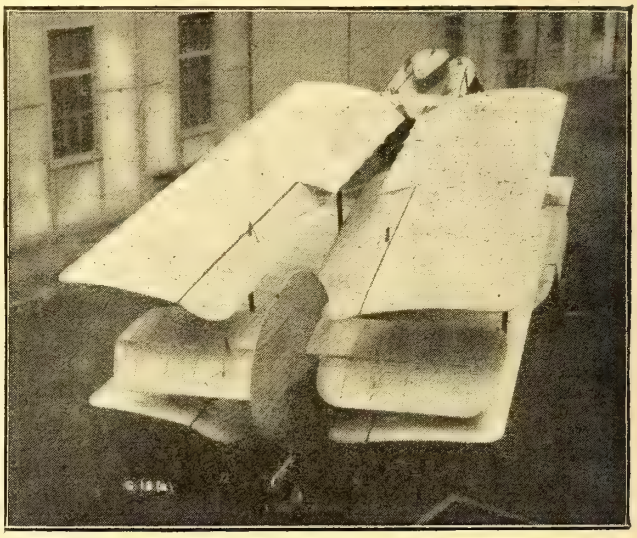
Specification.

Type of machine · Short Sporting Type Seaplane.
Engine, 160 h.p. "Beardmore."
Maximum power, 200 h.p.
Fuel capacity: Petrol, 35 galls. (3 hrs. flight).
Oil, 3 galls
Dimensions: Span, 44 ft.; span, folded, 15 ft.; length, 33 ft.; height 12 ft. Total surface, 500 sq. ft.
Loading: 6.2 lb. per sq. ft.—15.5 lb. per h.p.
Passengers and crew: 1 pilot and 3 passengers.
Range: 270 miles.
Weights: Total weight, 3,100 lb.

Weight, empty	2,095 lb.
Petrol	255 lb.
Oil	30 lb.
Water	80 lb.
Pilot	160 lb.
Passengers and freight	480 lb.
	3,100 lb.

Performance: Speed, 83 m.p.h.; climb, 10,000 ft. in 35 min.

Short Bros., in addition to their seaplane productions, have now taken over the patent rights for Lt.-Colonel Busteed's emergency flotation gear.



The Sporting Type Short, with Wings folding.

THE B.S.A. AND DAIMLER COS.

It is, of course, never safe to suggest that "everyone knows" anything—however much a matter of widespread notoriety that thing may be—and doubtless there are those who do not know that it is in the main to the B.S.A. concern, and to their enterprise in taking up the manufacture of the Lewis gun, that the British Air Services owe this very useful weapon.

Even were this their only claim to have assisted in the development of British aeronautics, it would still entitle them to fame in that sphere, but a detailed account of the work of this and the associated concern of Daimler, Ltd., reveals that their faculty of organising the efficient manufacture of intricate parts in large quantities had a much more direct influence on the growth of British Air Power during the war.

One startling performance—due to the Daimler Co.—occurred at the very beginning of hostilities. On Aug. 7th, 1914, the Daimler Co. agreed with the Gnôme Engine Co. to undertake the manufacture in England of the 80-h.p. Gnôme engines. There were no drawings or specifications—merely a sample engine sent by road from Hendon to Coventry, to be dismantled, measured, drawn down and the components analysed.

Within eight weeks—on September 31st—the first engine was running on the test bench.

Later the R.A.F.1a, R.A.F.4, the 110 Le Rhone, and the 230 b.h.p. engines were in turn tackled by the Daimler Co. and the B.S.A. Co., and the difficulties of production overcome with the same whole-hearted zeal.

Aeroplanes of numerous types were similarly put in hand, of types ranging from the B.E.2c to the De.H.10, and with equally successful results.

During the same period the output of service rifles, ammunition, shells, automobiles, tractors, tank power plants, and many other war-time essentials were manufactured in huge and ever-growing quantities, and the work of these two associated companies affords irrefutable evidence that this country is capable of the organisation and management of works on the largest scale.

The great Australian Flight was started and finished on "SHELL" AVIATION Motor Spirit

Captain Ross Smith's magnificent and epoch-marking flight of 10,925 miles in 27 days, 20 hrs., 20 mins., which, in the words of the King, "will bring Australia nearer," was accomplished on a Vickers - Vimy Rolls-Royce Eagle-mark VIII—the identical type of machine used by Captain Sir John Alcock in his historic flight across the Atlantic, "SHELL" AVIATION Motor Spirit having been used by both aviators.

The Australian Government's prize of £10,000 thus won by Captain Ross Smith makes the fourth prize of £10,000 to be won on "Shell," the preceding three being:—

"Daily Mail" £10,000 Prize, London-to-Manchester Flight, Won by Paulhan in 1910, on "SHELL" Spirit.

"Daily Mail" £10,000 Prize, Circuit-of-Britain Flight, Won by Beaumont in 1911, on "SHELL" Spirit.

"Daily Mail" £10,000 Prize, America-to-Europe-direct Flight, Won by Capt. Alcock in 1919, on "SHELL" AVIATION Spirit.

ALL Prizes in the 1919 Aerial Derby were won on "SHELL" AVIATION Motor Spirit.

A limited quantity of "SHELL" AVIATION, the Motor Spirit de Luxe, is now available for private motorists. It is sold *only* in the ALL-GOLD CANS. The supremacy of "SHELL" AVIATION Spirit on the world's Aerial Highways establishes beyond all question that "SHELL" AVIATION is the most powerful and dependable motor spirit in existence.

"SHELL" MARKETING CO., LTD.
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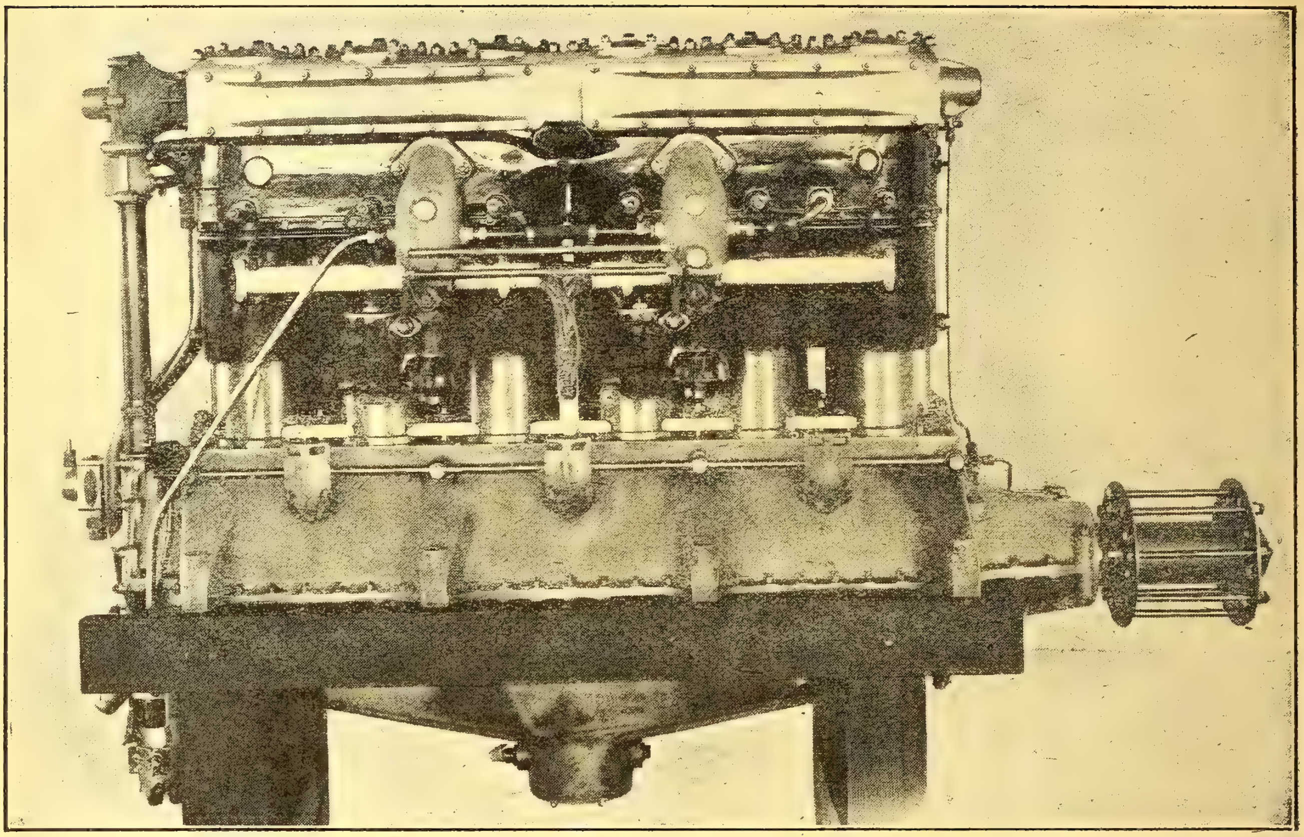
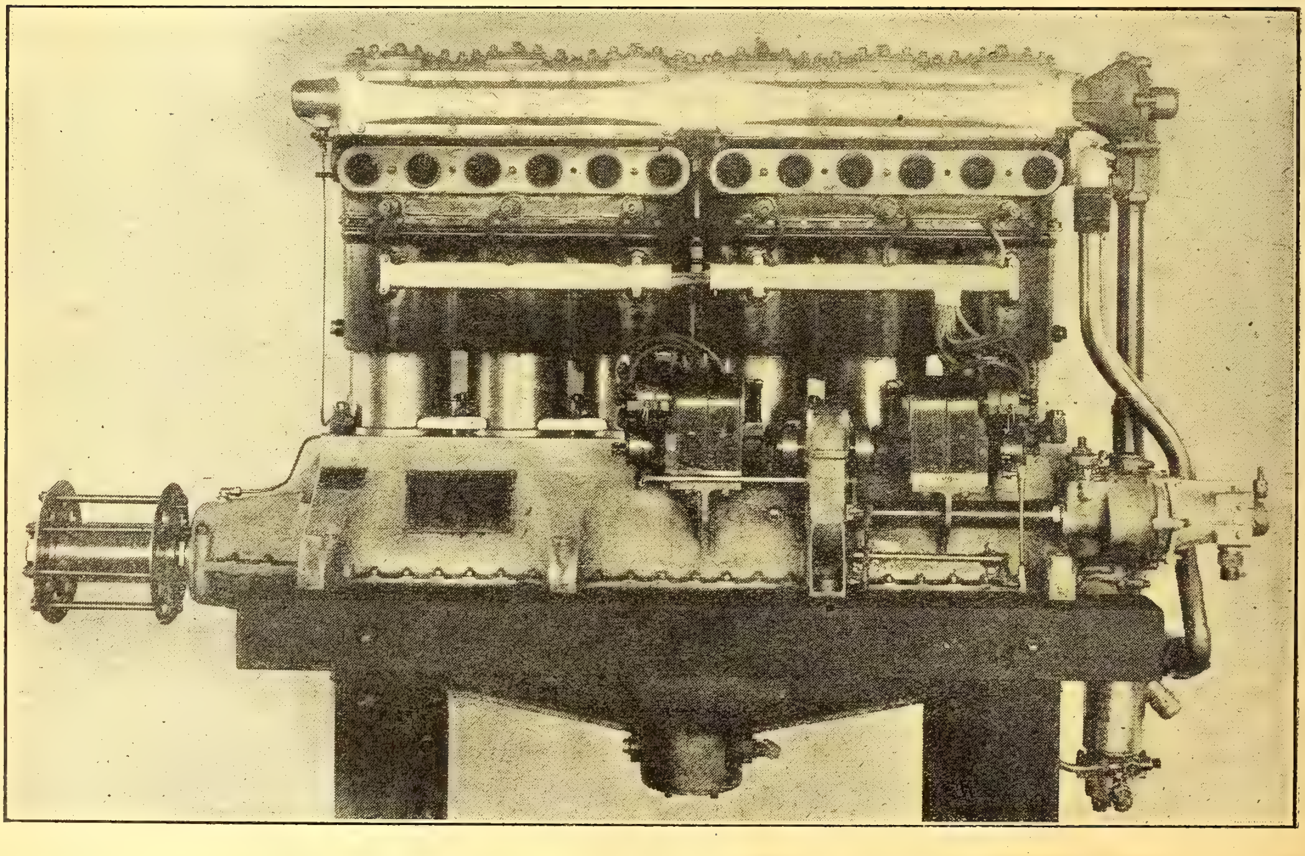
B.H.P. ENGINES.



The original 230-h.p. B.H.P. "Adriatic" Aero Engine. (Inlet Side).

The original design of 6-cylinder water-cooled B.H.P. engine was produced by Major (then Captain) F. B. Halford, in collaboration with Sir William Beardmore, Bart., and Mr. T. C. Pullinger (managing director of Arrol-Johnston and Co., Ltd.).

The work was started in the Spring of 1916, when the situation on the Western Front made it vital that the Royal Flying Corps should have machines with engines of considerably higher power than had been used to that date. Although the



Exhaust and Magneto Side of the B.H.P. "Adriatic" engine of 230 h.p.

PARIS AERO EXHIBITION.

THE COSMOS ENGINEERING CO.'S 450 H.P. "JUPITER" ENGINE will be shown in a "Bristol Bullet" Machine exhibited by the British & Colonial Aeroplane Co., Ltd.

STAND 65.

THE COSMOS ENGINEERING CO.'S 100 H.P. "LUCIFER" ENGINE will be shown in a Boulton & Paul Machine. :: :: ::

STAND 44.

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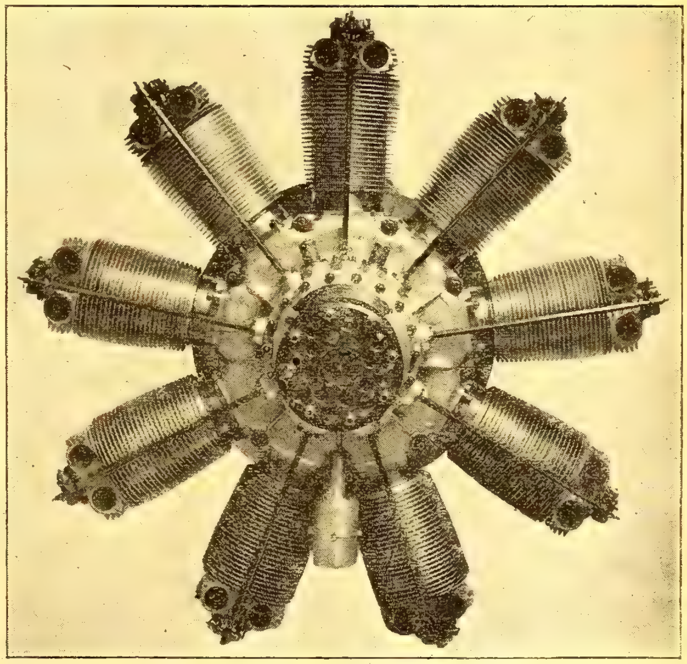
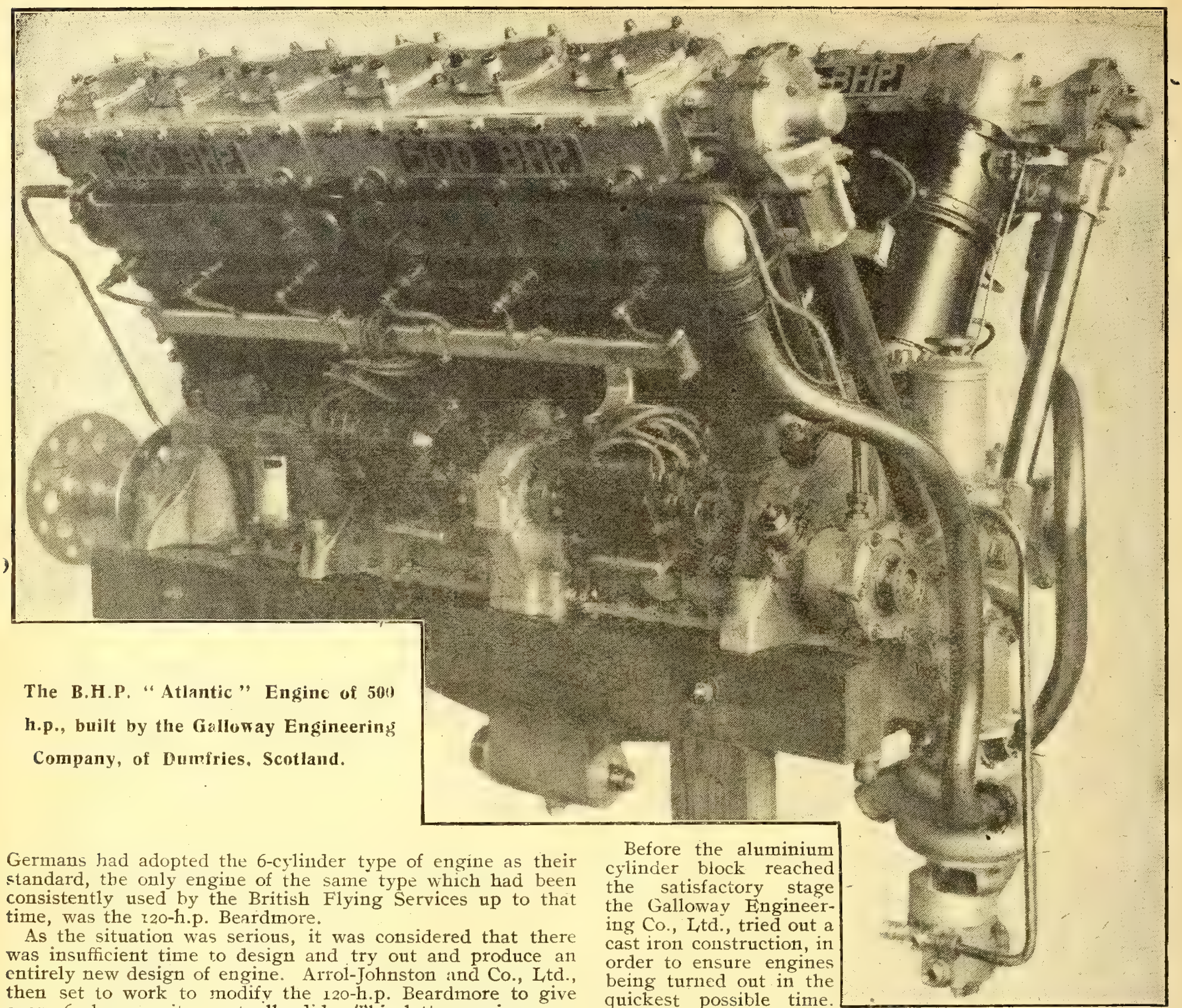


"Supreme in Power for Weight."



The B.H.P. "Atlantic" Engine of 500 h.p., built by the Galloway Engineering Company, of Dumfries, Scotland.

Germans had adopted the 6-cylinder type of engine as their standard, the only engine of the same type which had been consistently used by the British Flying Services up to that time, was the 120-h.p. Beardmore.

As the situation was serious, it was considered that there was insufficient time to design and try out and produce an entirely new design of engine. Arrol-Johnston and Co., Ltd., then set to work to modify the 120-h.p. Beardmore to give over 160 h.p., as it eventually did. This latter engine completely replaced the 120-h.p. and has done extraordinarily good work on long-distance bombing and reconnaissance machines.

A new company, the Galloway Engineering Co., Ltd., was formed to exploit the new B.H.P. engine, and a new factory was built to assist its production. The size of the cylinder proposed, i.e., 145 mm. bore, was considered by many to be too large to embody in a 6-cylinder engine, but, as has been happily proved, the critics proved wrong.

The first engine was running in June, 1916, and after satisfactory non-stop endurance tests on the bench, was fitted into a D.H.4 aeroplane, which had been specially designed for the engine by Capt. Geoffrey de Havilland, of the Aircraft Manufacturing Co.

The results in the air with this combination proved extremely satisfactory, in that although the best performance of this type of machine had been approximately 95 m.p.h. the D.H.4 resulted in 115 m.p.h. at 1,000 ft.

The machine was officially tested by the Central Flying School and decision made by the authorities to order the engine in larger numbers than had been proposed before with any other type.

Realising the facilities that would be required to produce 100 engines per week and spares, which was the figure suggested, and in view of the important part played by the Beardmore engine (which occupied the whole production of Arrol-Johnston and Co., Ltd.), Siddeley-Deasy, of Coventry, were asked to take over the production of the B.H.P. and to take such steps as would ensure the maximum output per week.

Although this firm was only then producing some 25 to 30 engines per week, the results of their efforts are best realised when it is stated that at the time of the Armistice the production of Siddeley-Deasy's works of the B.H.P. engine, better known as the "Puma," was equivalent, including spares, to 200 engines per week.

The engine was made the standard 6-cylinder water-cooled used by the Royal Air Force, and has been consistently used by the Independent Air Force in the bombing of Rhine towns.

Before the aluminium cylinder block reached the satisfactory stage the Galloway Engineering Co., Ltd., tried out a cast iron construction, in order to ensure engines being turned out in the quickest possible time. This type was dropped when the Siddeley engines reached the production stage.

Realising again the necessity for considerably higher powered engines, the Galloway Engineering Co., Ltd., set to work to design and produce a 12-cylinder b.h.p. engine.

To eliminate as many experimental features as possible a double B.H.P. was made, incorporating two pairs of cylinder blocks with cast iron construction. This engine was known as the "Atlantic" B.H.P. and gave 500 h.p. at 1,500 r.p.m.

As in the case of the 6-cylinder B.H.P. no gear reduction was fitted, and the fact that the weight per h.p. of 2¼ lb. was obtained with an engine running at only 1,400-1,500 r.p.m. was very creditable. This engine, the "Atlantic," was tested out on the bench, and also flown in another of the Aircraft Manufacturing Company's machines, the D.H. 9A, which was designed for the "Liberty."

A short time before the Armistice when it became imperative that a high power engine should be standardised for bombing machines, one of the engines chosen for mass production was the "Atlantic"; but for production purposes as the "Puma" cylinder blocks were then on a satisfactory production basis and being turned out in very large numbers, it was decided to pool the resources of several of our largest firms in the mass production of the engine, which was then rechristened the "Siddeley Pacific." Some thousands were ordered, and but for the Armistice no doubt would have been produced. It is thus interesting to see the order in which the four engines came forward.

THE 230-h.p. SIDDELEY "PUMA."

ENGINE DATA.

Type : 6-cylinder water-cooled vertical. Aluminium, with steel liners.
Bore : 145 mm.
Stroke : 190 mm.
Horse-power : 230 at 1,400 r.p.m.
Weight (dry) : 680 lb. (including airscrew boss, carburetters, magnetos, etc.).
Fuel consumption : 0.55 pints per b.h.p. hour.
Oil consumption : 0.025 pints per b.h.p. hour.

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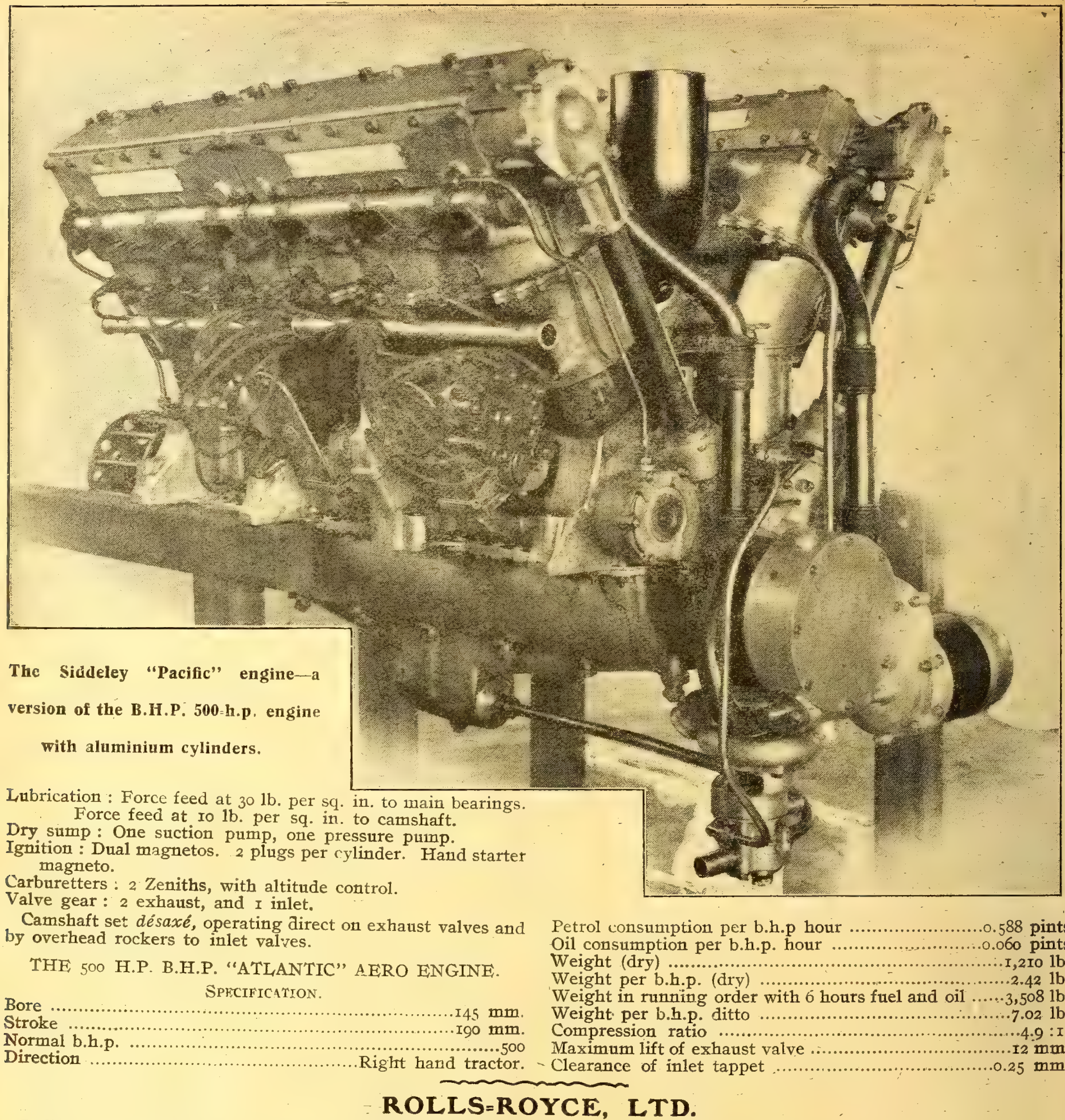

The Siddeley "Pacific" engine—a version of the B.H.P. 500-h.p. engine with aluminium cylinders.

Lubrication : Force feed at 30 lb. per sq. in. to main bearings.
Force feed at 10 lb. per sq. in. to camshaft.
Dry sump : One suction pump, one pressure pump.
Ignition : Dual magnetos. 2 plugs per cylinder. Hand starter magneto.
Carburetters : 2 Zeniths, with altitude control.
Valve gear : 2 exhaust, and 1 inlet.

Camshaft set *désaxé*, operating direct on exhaust valves and by overhead rockers to inlet valves.

THE 500 H.P. B.H.P. "ATLANTIC" AERO ENGINE.

SPECIFICATION.

Bore	145 mm.
Stroke	190 mm.
Normal b.h.p.	500
Direction	Right hand tractor.
Petrol consumption per b.h.p hour	0.588 pints
Oil consumption per b.h.p. hour	0.060 pints
Weight (dry)	1,210 lb.
Weight per b.h.p. (dry)	2.42 lb.
Weight in running order with 6 hours fuel and oil	3,508 lb.
Weight per b.h.p. ditto	7.02 lb.
Compression ratio	4.9 : 1.
Maximum lift of exhaust valve	12 mm.
Clearance of inlet tappet	0.25 mm.

ROLLS-ROYCE, LTD.

Rolls-Royce aero engines need little introduction to the readers of this paper. Their work during the war, when they proved themselves unequalled amongst all the high-power engines produced either by the Allies or the enemy, and their achievements since the conclusion of hostilities, from flying the Atlantic to carrying on the London-Paris air service, provide conclusive testimony to their merits.

The Australian flight of Capt. Ross Smith adds further testimony to the capacity of these engines to stand up to hard work.

At the present time Rolls-Royce, Ltd., state that they are only manufacturing their "Eagle" type of engine for sale commercially. Whether this is to be taken as meaning that the "Falcon" is to be abandoned is not quite clear, but it is to be hoped that it merely indicates that manufacturing facilities are not yet equal to the demand for this type.

The Rolls-Royce "Eagle" engine is the type so largely employed on the Handley Page and Vickers "Vimy" bombers and upon the famous "F" boats during the war. Up to the date of the Armistice of 122 Handley Page bombers which had been built, 113 were equipped with Rolls-Royce engines.

The "Eagle" engine has been fairly fully described in past issues of THE AEROPLANE, but some recapitulation of its characteristics may well be indulged in.

The engine is of the 12-cylinder Vee type, with a bore of 4½ in. and a stroke of 6½ in., giving a normal output of 330 h.p. at 1,650 r.p.m. and a maximum output of 360 h.p. at 1,800 r.p.m. The cylinders are of steel, fitted with overhead valves set in two rows of six with an intervening angle of 60 degrees upon a crankcase of cast aluminium.

The valves are operated through rocker arms by one overhead camshaft to each row of cylinders. Each cylinder forms a separate unit, and is fitted with an independent welded on sheet steel water jacket.

The connecting rods are of the articulated type, and there is therefore only one big end on each throw of the six-throw crankshaft.

The airscrew end of the crankshaft carries a gear ring with external teeth, which drives the airscrew shaft through an epicyclic reduction gear with a ratio of 1 to 0.6.

Forced lubrication is naturally employed throughout, and arranged on the dry-sump principle, wherein two oil pumps are employed. One of these pumps, of somewhat greater capacity than the other, removes the used oil from the crankcase sump and returns it to the oil tank to cool, the second pump forcing oil from the tank to all the bearings.

Four 6-cylinder magnetos supply current to two plugs in each cylinder, and the ignition system is thus completely duplicated.

Very great attention has been paid to securing economy of both fuel and oil, and the petrol consumption at 330-h.p. is only 0.21 gallons per hour.

The engine complete with airscrew hub, hand-starting gear, magnetos, reduction gear, but without exhaust manifolds, radiator oil or water is 900 lb.

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The Cosmos "Mercury" engine of 315 h.p. and the "Jupiter" of 450 h.p. are already fairly well known in the world of aviation, and have been fully described in the pages of THE AEROPLANE.

The Cosmos "Lucifer"—an engine designed specially for use in commercial and pleasure aircraft of moderate power—will make a public appearance at the Paris "Salon Aeronautique," which opens on Dec. 19th.

This engine is designed to meet the requirements of the low power, low cost, aeroplane power unit.

In considering the design, careful attention has been given to reliability and long life, combined with low cost and ease of production.

The "Lucifer" engine is a 3-cylinder inverted "Y" type radial engine, of moderate performance. There has been no attempt to cut weight or obtain the maximum performance from the engine, and the number of parts has been reduced to the minimum and to the simplest design possible embodied compatible with sound mechanical principles.

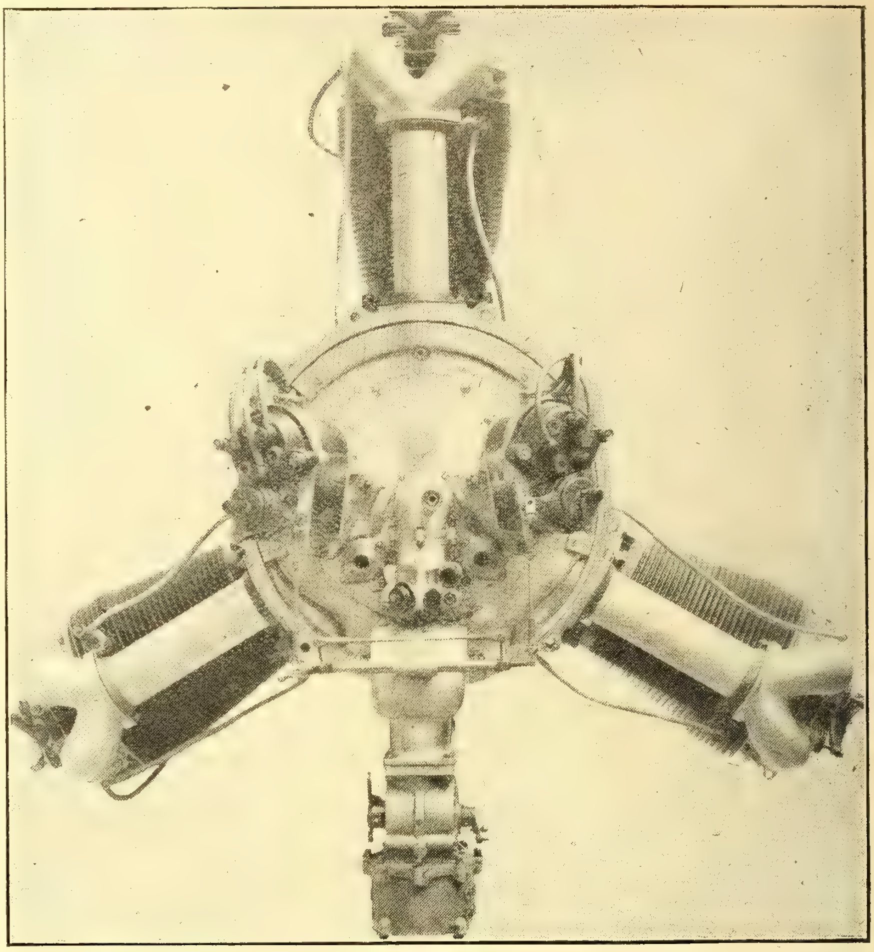
The engine may be relied upon to run for long periods without overhauling or dismantling from the aeroplane, and the general all-round performance and reliability are comparable with the modern motor-car engine.

The engine is rated at 80 h.p. : 100 h.p. at 1,600 r.p.m. is guaranteed with a moderate m.e.p.

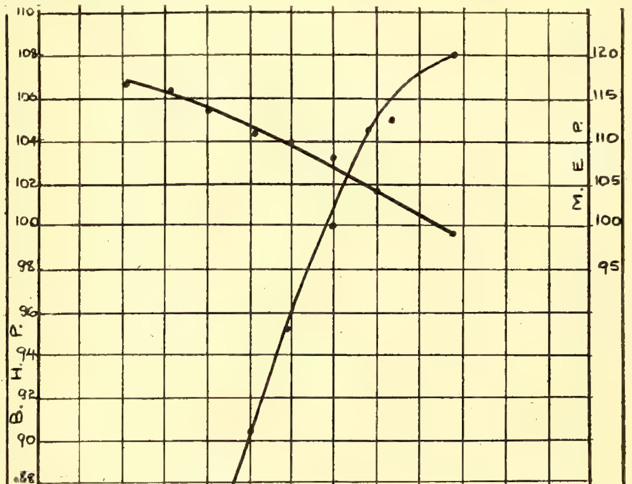
The main features of the engine are as follows :—

CYLINDERS.—Three cylinders, bore [illegible] in., stroke 6¼ in., radially disposed, arranged as an inverted "Y."

The cylinders are air-cooled, being a combination of aluminium and steel, and embodying the Cosmos patent aluminium head.



The Cosmos "Lucifer" Engine of 80 h.p.



Power Curve of the "Lucifer" Engine.

VALVES AND TAPPET GEAR.—Overhead valves are employed, operated by push-rods arranged on the front side of the cylinders.

CRANKCASE.—The crankcase is a simple circular aluminium casting, and the engine is attached to the fuselage of the aeroplane by a circular flange situated at the back of the case.

AIRSCREW SHAFT AND HUB.—The airscrew runs at engine speed of 1,600 r.p.m. The airscrew shaft is integral with the crankshaft. The airscrew hub is standard Air Board design, and is attached to the airscrew shaft by means of serrations and a taper.

CRANKSHAFT AND CONNECTING-ROD ASSEMBLY.—The crankshaft is a one-piece solid forging. The connecting-rods are of "H" section, and the big-end bearings are lined with white metal, run direct into the big end of the rod.

IGNITION.—Dual ignition is fitted, the generator and distributors being driven off the back-end of the engine. The distributors are in an accessible position.

PISTONS.—The pistons are of the modified slipper type, with three rings at the top and a scraper ring at the bottom.

LUBRICATION.—Two oil-pumps are provided, one scavenging and one suction, oil being fed, under pressure, from the crankshaft. The filters are so arranged that they may be withdrawn for cleaning purposes from the front-end of the engine, and an adjustable oil relief valve is provided

INDUCTION SYSTEM AND CARBURETTER.—A circular induction system is fitted to the three cylinders at the back of the engine. One carburetter feeds the three cylinders, the branch pipe from the carburetter to the circular ring being provided with an exhaust-heater.

STARTER GEAR.—The engine will be provided with a starting-handle, which may be operated from the pilot's cockpit.

WEIGHT AND PERFORMANCE.—The normal rating is 80 h.p., with a maximum b.h.p. of 100 at 1,600 r.p.m. The total weight of engine, all on, is 280 lbs.

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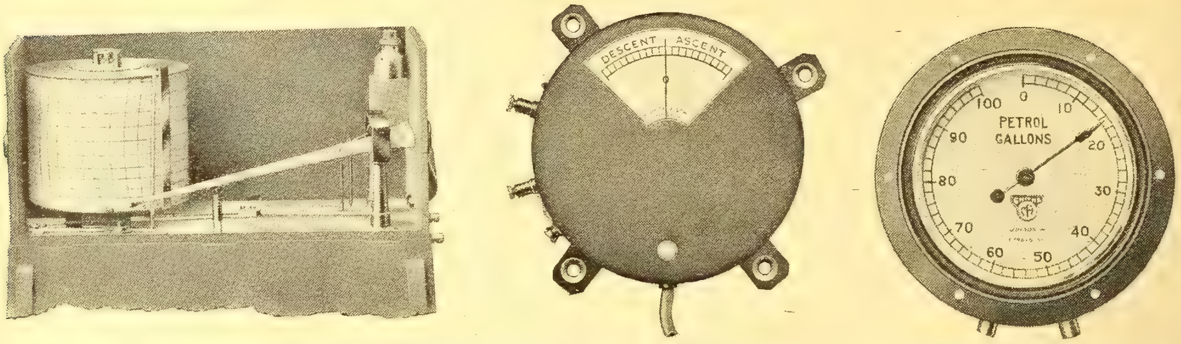
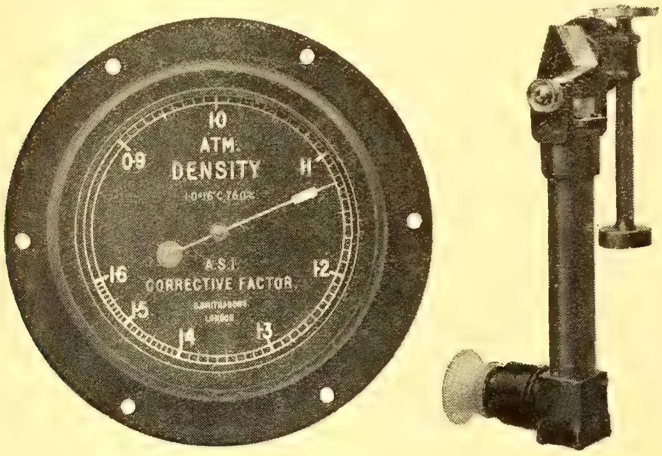


From Left to Right.—The Smith Recording Altimeter, the Smith Statoscope, and the Smith Petrol Gauge.

S. Smith and Sons (M.A.), Ltd., were established in 1899, and their first speedometer was manufactured and assembled for the late King Edward. With the resultant demand for this fitment, S. Smith and Sons, Ltd., built up their business and expanded their premises, until at the present day they stand as one of the largest manufacturers of instruments for use in the motoring and aviation industries.

During the late war their whole output was earmarked for the production of instruments and fittings of precision for the British and Allied Services. They claim that they supplied more aviation instruments for the British and Allied Governments than any other maker In addition they produced upwards of eight million fuses, besides a vast number of their standard speedometers and carburetters, together with gun mechanisms and other sundries.



The Smith Atmospheric Density Gauge and the Baker Air Sextant.

It is only natural then, with their wide and successful use in the war, that their instruments will be and are being used by most of the largest aircraft firms, as well as by the Services at the present time. It is interesting to note that both the Sopwith and the Vickers "Vimy" machines used in the first unsuccessful and successful direct flights across the Atlantic, respectively, as well as on the Alliance machine that flew from London to Madrid non-stop used Smith instruments, and the Hughes sextants (for which S. Smith and Sons, Ltd., are sole agents) were used on the R.34 on its American voyage.

The range of aviation instruments they make include the Smith revolution indicator (flush fitting model, bracket fitting model, both of which can be fitted with a counter to give the number of revolutions up to a hundred million revolutions), all types of revolution indicator drive and gear-boxes, the Smith air speed indicator (Clift's patents), the Smith recording air speed indicator, the Smith atmospheric density gauge, the Smith altitude recorder, the Smith wristlet and pocket altimeters, the Smith maximum registering aneroid (also in a pocket edition), the Smith recording altimeter, the Smith statoscope, the Smith anemometer, Smith aviation clocks and watches, the Smith manometer (Clift's patent), the Smith petrol gauge (Clift's patents), the Smith kite balloon winch indicator, the Smith tankometer, the Smith chronoscope or "time of flight" instrument, Smith clinometers (lateral and longitudinal), gradometers, chronometers, thermometers, all types of aviation compasses, the Baker air sextant, signalling lamps, safety-belts, etc., etc.

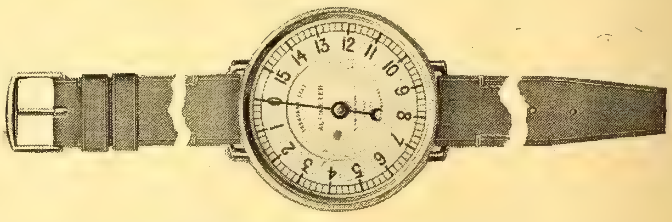
The Smith petrol gauge (Clift's patent) is an accurate and reliable gauge for recording the amount of fuel in the tanks of aeroplanes and airships. The advantage of this gauge is that it can be fitted with a dial at any distance from the tank, so that it is particularly adaptable for both airships and large aeroplanes where the tanks are a considerable distance from the cockpit. Two pipes, one leading from the bottom of the tank and one from the top are connected to the instrument. By ejecting the petrol from the bottom pipe, by a small rubber bulb, the difference in the pressure in the two pipes will give a reading on the dial indicating the number of gallons in the tank.

The Smith atmospheric density gauge is the first instrument of its kind ever put on the market and used in conjunction with the air-speed indicator gives the corrective factor for the various heights whilst in flight. The instrument is calibrated in numbers, which when multiplied by the m.p.h. shown on the ordinary air-speed indicator, give the actual air speed.

The Smith statoscope is simply a very sensitive form of atmospheric gauge indicating a rise or descent of ten feet or even less. It consists of a chamber with a short length of rubber tubing attached. The end of the tube is open to the air, and, therefore, the air contained in the chamber will remain at atmospheric pressure. If, however, the rubber tubing is squeezed, while the machine is climbing, the ascent will be indicated on the dial. This is due to the fact that while the air-pressure in the chamber will remain constant, the pressure of the surrounding atmosphere will have decreased if the machine is climbing, and will exert less pressure on the outside of the diaphragm, which constitutes one side of the air chamber. The air imprisoned in the chamber will, therefore, tend to expand the diaphragm, which is attached to the pointer by suitable recording mechanism.

The Baker air sextant (for which S. Smith and Sons (M.A.), Ltd., are sole agents) has been specially designed for air recording work. The altitudes are taken in the usual way by means of a prism fitted with an adjustable sunshade attached to a centre plate, or worm, which is adjusted by means of a knurled screw with a micrometer head. The back and front horizons are reflected in the same field as the celestial object, and a very rapid and accurate observation can be made. The focussing of the instrument is carried out by simply rotating the knurled band on the lens mounting.

The Smith wristlet and pocket altimeters are both extremely well-made and compact little instruments, and can be obtained to register either to 15,000 or 30,000 feet in the wristlet pattern, and 10,000, 15,000 or 30,000 feet in the pocket pattern, which also has a weather indicator on the dial, as illustrated.



Above: The Smith Pocket Altimeter. Below: The Wristlet Edition of a similar instrument.

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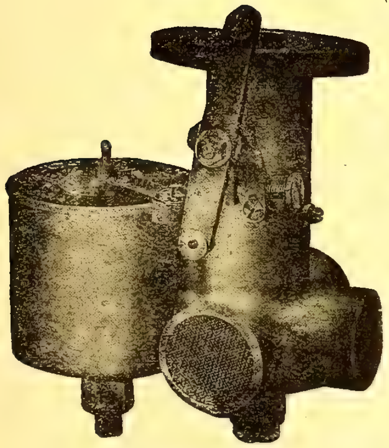

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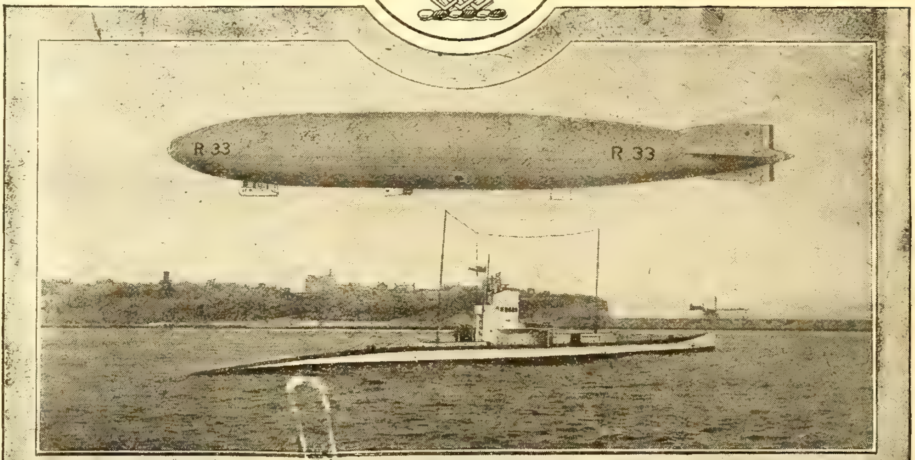

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THE WORK OF THE MARINE EXPERIMENTAL AIRCRAFT DEPOT, ISLE OF GRAIN.—(*continued.*)

BY CAPT. W. H. SAYERS, LATE R.A.F.

The successful "ditching" tests on the "Pup" led to the consideration of similar arrangements for two-seater machines, and it was decided to experiment with a Sopwith "one-and-a-half strutter."

The design of flotation gear developed for this machine, although based on the same principles as that for the "Pup," was very considerably modified.

In the first place the dropping chassis was regarded with distrust. A chassis which fell off on pulling a string might conceivably drop off on occasions when it was not required to do so. On the other hand it was fairly well known that the ordinary landing gear set up a very great upsetting moment when it struck water, and that the actual water resistance of the wheels provided a considerable portion of this upsetting moment.

It was decided, therefore, to add to the chassis a forward member, carrying at about the normal axle level a planing surface which on touching water would give a supporting moment ahead of the C.G.

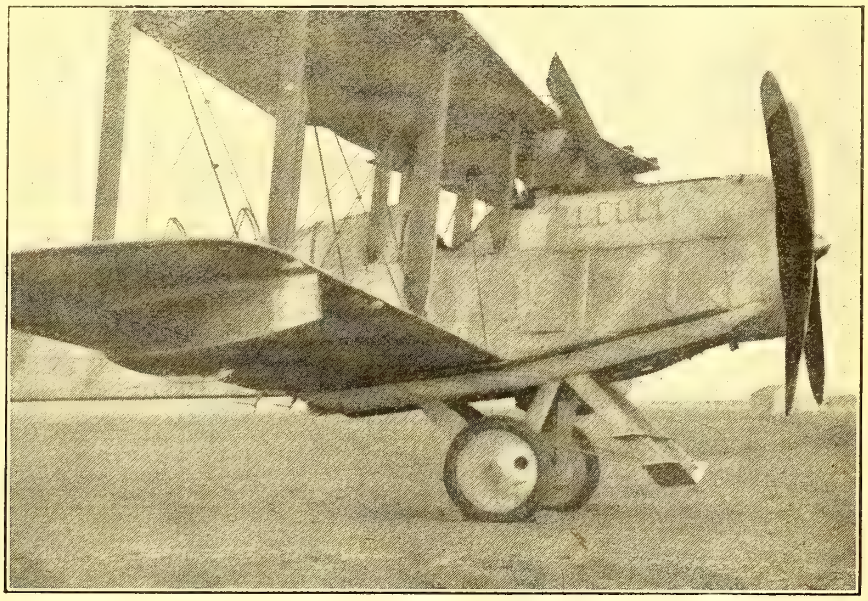
It was also decided to discard the landing wheels before touching the water.

At the same time it was decided to take advantage of the considerably greater forward protrusion of the fuselage and engine mounting in the two-seater machine by using the fore end of the machine to support longitudinal air bags at each side of the fuselage instead of the wing bags used on the "Pup." To the top of the forward strut of the chassis Vee on each side was affixed a wide plank strut projecting forward and down to the level of the wheel axle, and carrying at its lower extremity a miniature biplane, built of wing section duralumin plates of 6 in.-chord, and having an overall span of about 5 ft.

The lower wing of the biplane was given a marked dihedral angle to give gradual entry into the water.

Steel tube struts running back to the bottom of the Vees took the water undercarriage drag loads, and the biplane arrangement adequately tied the two struts laterally.

The end of the wheel axles were cut off short outside the shock-absorber fittings, and the wheels were mounted on stub axles, pressed into the tube axle against coiled springs and locked in place by a tapered steel pin, which could be pulled out from the pilot's seat by a cable attached to a lever in the cockpit.

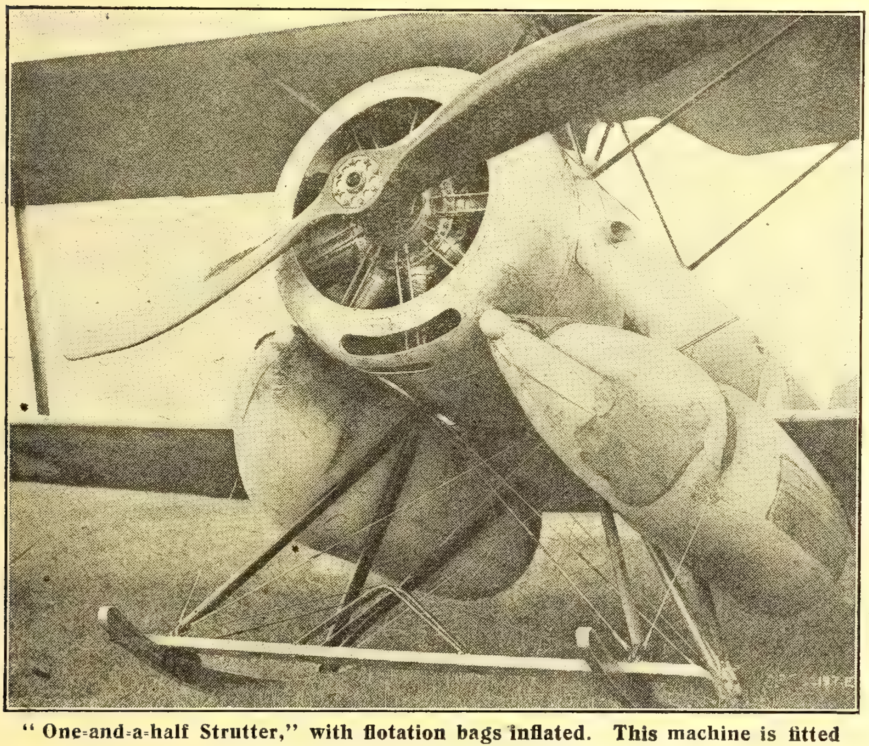


Emergency Flotation Gear fitted to a DeH.4. Note the biplane Hydrovane.

Along the lower edge of the fuselage on each side a pair of angle boards, clipped to the chassis struts forward and supported beneath the wings, were attached.

The air bags, cylindrical amidships with a pointed fore end and a hemispherical stern, were stowed into the corner of the angle boards, to which they were firmly attached by fabric flaps cemented to the bags, and clamped to the boards by screwed-on laths.

When uninflated the bags were rolled up and clipped into a fabric flap and buttoned to the angle boards, and the total end on area of the structure was only about 4 sq. in. of bag, and the edges of the boards—each about 10 in. by ½ in.



"One-and-a-half Strutter," with flotation bags inflated. This machine is fitted with skid chassis and a single wooden hydrovane.

This arrangement of bag had the advantage of not interfering in the least with the controllability of the machine—as even with the bag on one side inflated, or partly inflated, and that on the other stowed, there was no appreciable effect on the controllability of the machine in the air.

With the earlier arrangement of bags under the leading edge of the wing, failure of one bag to inflate owing to a blocked pipe, or to the sticking of the retaining flap, would have put the machine completely out of control.

This first one-and-a-half strutter flotation gear was in general arrangement similar to that shown attached to a DeH.4 in the photograph above.

Tests made on the 1½-strutter were very successful. The bags inflated or otherwise made no noticeable difference to the handling of the machine. It was therefore possible for the pilot, having decided to land in the water, to inflate his bags, release his wheels, and so forth, at leisure and at a reasonable height, and to fly while he assured himself that all was ready.

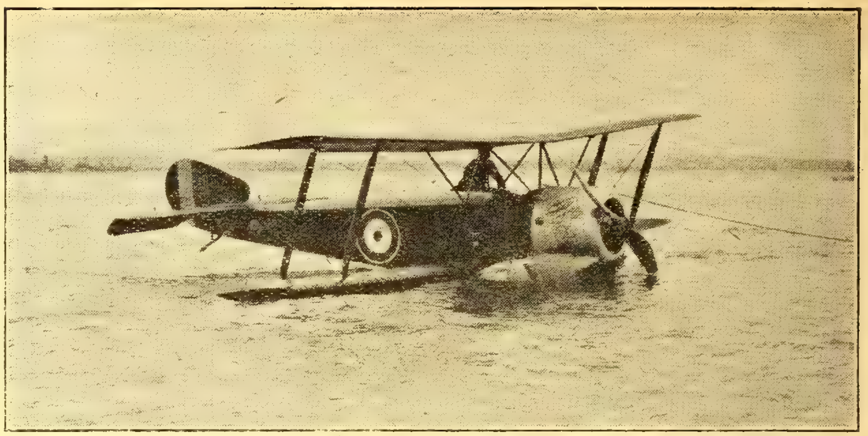
On one early test a pilot discovered that the wheel ejecting gear had failed on one side, and flew round for some minutes at 1,000 ft. with bags fully inflated while he sideslipped at intervals till he had removed the offending wheel.

At the request of the French authorities a standard Voisin bomber was fitted by Port Victoria with an emergency flotation gear, and for this machine air bags along the lower wings were used.

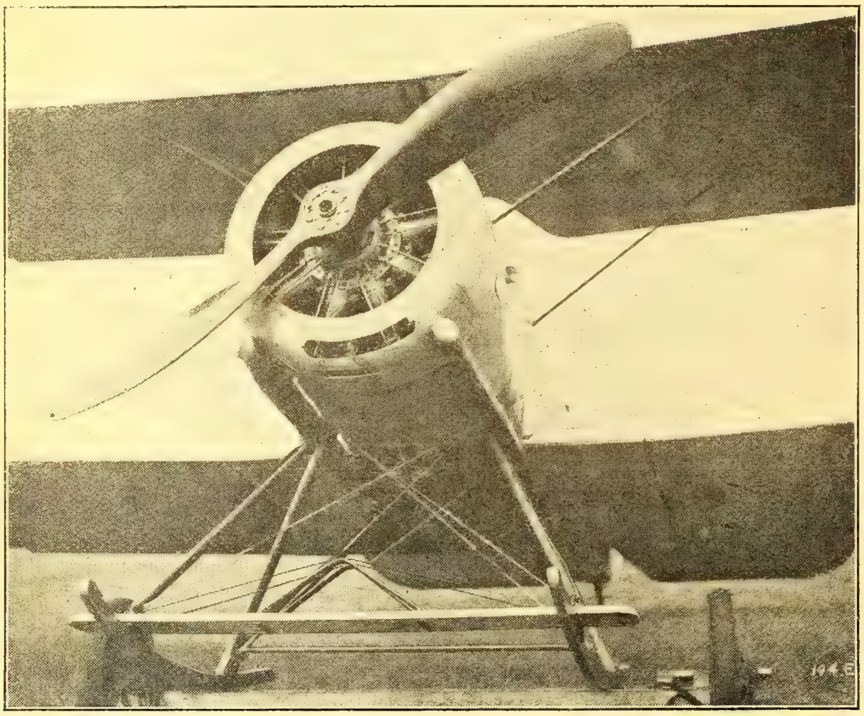
In the first installation these bags were made to extend over only about half the wing span. This led to too high a loading on the front spar when afloat, and resulted in severe buckling of the steel tube spar on landing. Bags of smaller diameter extended to the outer row of interplane struts were therefore fitted, with satisfactory results.

Hydrovane surfaces for alighting were provided first by covering in both axles with a three-ply casing of wing section, but eventually only the front axle was so fitted.

The Voisin, piloted by M. Bonnet-Labranche, made a colossal splash on striking the water, but was successfully induced to float right side up and undamaged.



A " One-and-a-half Strutter," with Flotation Gear, after alighting.



"One-and-a-half Strutter" Flotation Gear, bags stowed on side rods.

A later development was the continuation of a skid chassis with the emergency landing gear. This was fitted first to a Curtiss J N.4 for experimental purposes and later to 1½-strutters.

Difficulties in the supply of the profiled duralumin for hydrovanes led to the substitution of wooden hydrovanes, which were found to operate equally well, and the original biplane arrangement was abandoned in favour of a single plane fitted with a king-post bracing.

On the D.H.4 whose flotation gear is illustrated a compressed air device was used to blow the landing wheels off before alighting, this being operated automatically by the act of turning air onto the air bags.

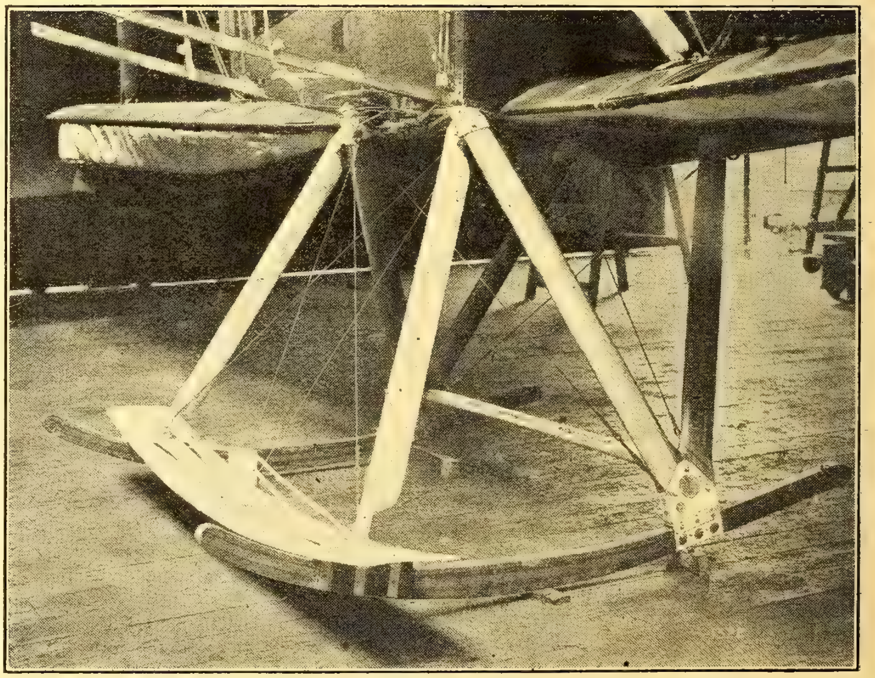
Certain F.E.2ds were also fitted with flotation gear on exactly similar lines. In this case the wheels were cast adrift in a very simple manner. Instead of slinging the wheel-axle above the skid, the axle was placed under the skid and held on by a catch of the sliphook type which was released by a cable pulled by the pilot and allowed the whole axle to drop clear.

The essential feature of the flotation gear was the method adopted for inflating the air bags. To provide the necessary buoyancy for a 2,500-lb. machine, allowing a reasonable margin, bags of a total volume of at least 50 cubic feet were necessary. The standard steel compressed air bottles used for starting seaplane engines were about 2 ft. long by 6 in. dia., and contained the equivalent of 20 cubic feet of air at atmospheric pressure, compressed to about 1,200 lb. per sq. in. and weighed somewhere about 12 lb. each. Thus for direct inflation of the bags of even a small two-seater machine three bottles would be needed, and a large amount of space would be required.

To overcome this trouble experiments were made with air injectors, and a very simple and satisfactory type was devised, consisting of a jet of very fine bore directly connected to the high pressure bottle surmounted by three cones of increasing diameter pressed out of solid drawn steel tube. The small end of the last cone was coupled directly to the main cock in the bag supply pipes.

This type of injector would inflate a bag whose cubic capacity was three times the bottle air content to a pressure of 1 lb. per sq. in. in less than one minute.

The general scheme of the connection is shown in a sketch, and the *modus operandi* of inflation was as follows:—The main air cock B being open the valve on the air bottle A is opened and high pressure air allowed to flow till air



Skid and hydrovane chassis, as fitted to a Grain " Griffin."

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THE—
Turner Patent Endless Shock Absorber Ring

(adopted by the Air Ministry, Avro, D.H., Short and other leading builders) enables designers to make an "engineering job" of landing gear and skid springs.

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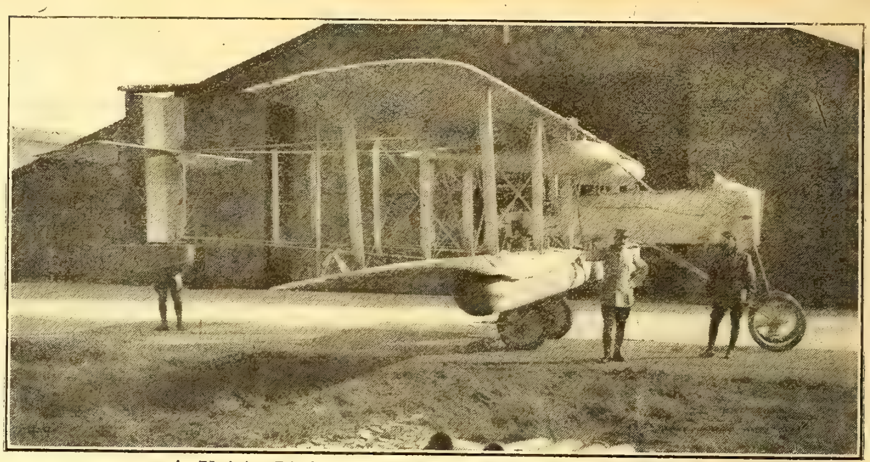
could be felt blowing back through the injector. This occurred when the air bags were fully inflated and could be felt immediately by the hand. Cock B was then shut off.

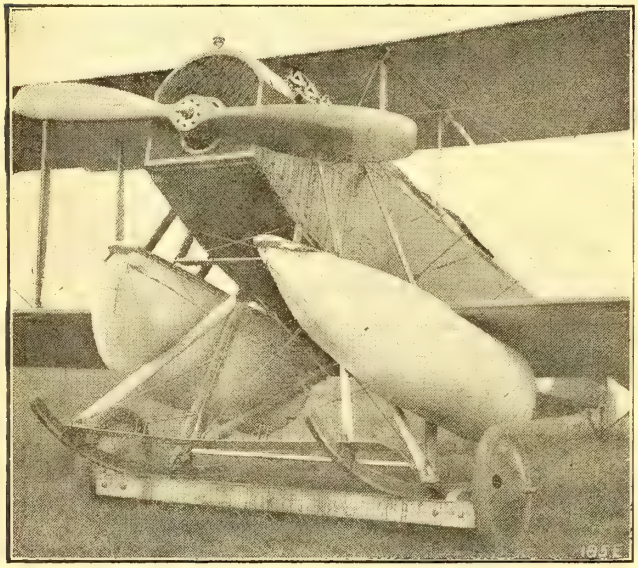
This process took from 20 to 40 seconds, according to the size of air bag and the bore of the injector high pressure jet.

Further refinements were also fitted, as a valve which cut off communication between the two air bags, and a hand trimming pump with which it was possible to compensate for leakage in either or both bags when afloat.

Finally, a wholly automatic system was revised whereby a pilot, having decided to alight on the water, turned on the air cock, and the whole process of inflating, turning off the bag supply cock at the right moment, and releasing the wheels was performed for him without further action on his part.


A Voisin Biplane fitted with wing flotation bags.

Regarded as an emergency fitting for land machines which have to operate over sea, this flotation gear has many good points. It was simple to construct and in use, was not unduly heavy, could be adapted to almost any type of aeroplane, and it would keep a machine afloat right way up for many hours in quite a rough sea. Small single and two-seater machines so fitted would remain in one piece on the water under weather conditions which would break up most seaplanes of similar size, and the pilot of a machine so fitted could go out to sea with considerably greater confidence than in a land machine devoid of such apparatus.



Emergency Flotation Gear on a Curtiss J.N.4.

On the other hand, there is some reason to suppose that the success of the P.V. emergency flotation gear was used in certain circles as an argument against continuing experimental work on the smaller classes of seaplane, and that it is thus indirectly responsible for some of the neglect into which this type of aircraft has fallen.

For commercial land machines which in the course of their route may have to cross stretches of sea, this gear has considerable value, and it is therefore noted here that the system is covered by patents in the name of Lt.-Col. H. R. Busteed, and that the rights for the manufacture thereof have been granted by him to Short Bros., of Rochester.

[THE END.]

NEW COMPANIES.

Aero and Motor Company (Manchester), Limited.—Private company. Registered Nov. 29th. Capital £2,000 in £1 shares. To take over the business of a motor car dealer carried on by A. D. Scarlett at 8, Peter Street, Manchester, as the "Aero and Motor Co.," etc. The first directors are:—A. D. Scarlett, 25, Plymouth Grove West, Manchester; B. M. Papelian, 46, Clarenden Road, Chorlton-on-Medlock, Manchester (of Persian nationality); A. Scarlett, 25, Plymouth Grove West, Manchester. Regd. Office:—8, Peter Street, Manchester.

First Atlantic Flight, Limited.—Registered Nov 29th. Cap. £100 in £1 shares. Objects: To carry on the business of manufacturers of and dealers in aeroplanes and airships, and all parts, equipment or accessories therefor, etc. The subscribers (each with one share) are:—A. W. Claremont, Vernon House, Sicilian Avenue, Bloomsbury, W.C.1., solicitor; H. L. Stuart, Vernon House, Sicilian Avenue, Bloomsbury, W.C.1, solicitor; C. R. R. Tildesley, Vernon House, Sicilian Avenue, Bloomsbury, W.C.1, solicitor; and four clerks. No person had consented to act as directors to Nov. 18th. Solicitors:—Claremont, Haynes and Co., Vernon House, Sicilian Avenue, Bloomsbury, W C.

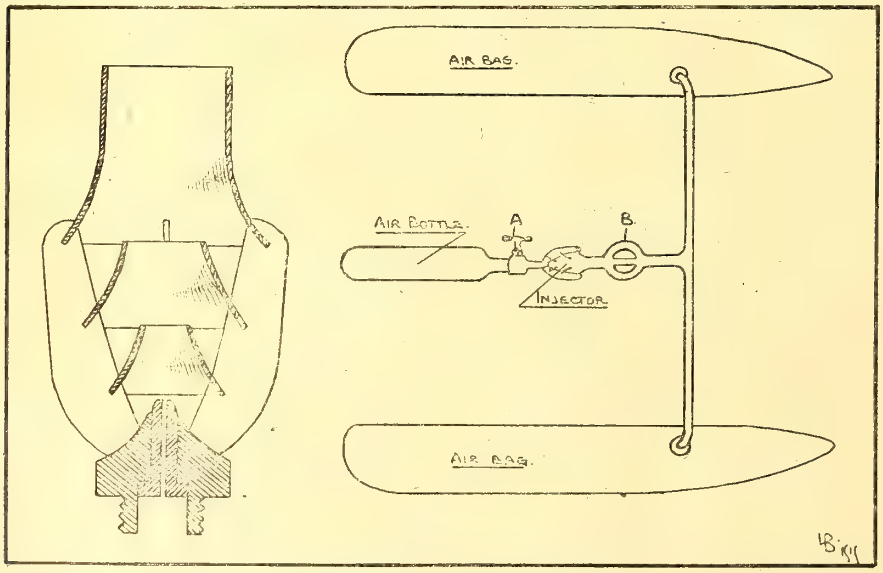


Diagram of the injector, and of the inflating connection for the P.V. Emergency flotation gear.

Photograph of the injector and air cock.

London-Paris Air Express

Mails—Parcels—Passengers

DAILY TIME TABLE.

HOUNSLOW (depart)... 12.30 p.m.
LE BOURGET (arrive) 2.45 p.m.

LE BOURGET (depart) 12.30 p.m.
HOUNSLOW (arrive)... 2.45 p.m.

Mails

By arrangement with the British and French Post Offices an express air-mail is now carried daily on this route. The fee is 2s. 6d. an ounce, over and above the usual rates of postage, and letters which are handed in during the morning in London, up to the times indicated, and at the Post Offices specified below, will be delivered in Paris by about 4 p.m. the same afternoon.

G.P.O., King Edward's Buildings, 11 a.m.; Threadneedle Street, 10.45 a.m.; Lombard Street, 10.45 a.m.; Parliament Street, 10.45 a.m.; Charing Cross 10.50 a.m.; W.C. District Office, 11.10 a.m.; W. District, 11.15 a.m.; S.W. District Office, 10.40 a.m.

Passengers

The passenger fares are as follows:—Single, £21; return, £42. This fare includes free conveyance by motor-car to Hounslow Aerodrome from any point within a mile of Piccadilly Circus, and also conveyance by motor from Le Bourget into Paris. Similar arrangements exist as to the journey from Paris to London. A passenger, called for at an hotel in London at 11 a.m., arrives at the door of his hotel in Paris by 4 p.m. the same afternoon.

Parcels

The rate for parcels is 5s. lb., but in the case of parcels weighing more than 2 lbs., or for regular consignments, much lower rates can be quoted If handed in up to 10 a.m. at the agents specified below, parcels will reach Paris the same afternoon; whereas by land and sea, even if a special "Grand Vitesse" fee is paid, a parcel is several days, and perhaps a week, in reaching its destination.

Full particulars regarding freights can be obtained from Aircraft Transport and Travel, Ltd., 25-27, Old Queen Street, S.W.1., or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C., and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street, and Beak Street, W.; Carter Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; Lep Aerial Travel, Piccadilly Circus (Criterion Corner); and Hernu, Peron & Co., 98-100, Queen Victoria Street, E.C.

Note.—Parcels are received up to 10.30 a.m. at the two depots mentioned above of the American Express Company; or up to as late as 11.30 a.m. at the Hounslow Aerodrome.

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
25-27, Old Queen Street, S.W.1.

PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysées.

NAVAL & MILITARY AERONAUTICS

[The official "Gazettes" and Personal Notices will be found on page 2028.]

GREAT BRITAIN.

FROM THE "COURT CIRCULAR."

BUCKINGHAM PALACE, Dec. 10th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

THE MOST DISTINGUISHED ORDER OF SAINT MICHAEL AND SAINT GEORGE.—Companions.—Air-Commodore Edward Maitland, R.A.F. (also received the Air Force Cross); and Lieut.-Col. Philip Herbert, R.A.F. (also received the Insignia of a Commander of the Most Excellent Order of the British Empire (Military Division)).

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE (MILITARY DIVISION).—Commander.—Sqdn. Ldr. George Scott, R.A.F. (also received the Air Force Cross)

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE (MILITARY DIVISION).—Officer.—Sqdn. Ldr. Donald Rainsford-Hannay, R.A.F.

Member.—Capt. George Golding, R.A.F.

The King then conferred decorations as follows :—

THE DISTINGUISHED SERVICE CROSS.—Capt. Frederick Horstman, R.A.F.

THE MILITARY CROSS.—Capt. Charles Smart, R.A.F.; Flying Officer Robert Reid, R.A.F.; Lt. Henry Sparkes, K.R.R.C., attd. R.A.F.

THE DISTINGUISHED FLYING CROSS AND BAR.—Capt. William Hubbard, R.A.F.

THE DISTINGUISHED FLYING CROSS AND THE AIR FORCE CROSS.—Sqdn. Ldr. Reginald Leslie, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Lieut.-Col. William Douglas, R.A.F.; Capt. William Reed, R.A.F.; Capt. James Robb, R.A.F.; Lt. William Ackery, R.A.F.; Flying Officer Robin Haworth-Booth, R.A.F.; Flying Officer Hedley Nicholls, R.A.F.; Lt. Cyril Rayment, R.A.F.; Flying Officer Adrian Reeves, R.A.F.; Lt. Francis Robinson, R.A.F.; Lt. Ian Ross, R.A.F.; Lt. Frederick Russell, R.A.F., Flying Officer Hugh Saunders, R.A.F.; Lt. Victor Siddons, R.A.F.; Flying Officer Charles Spackman, R.A.F.; Lt. Malcolm Stewart, R.A.F.; and Pilot Officer Francis Seed, R.A.F.

THE AIR FORCE CROSS.—Wing Comdr. Cuthbert Rabagliati, R.A.F.; Sqdn. Ldr. Douglas Harries, R.A.F.; and Flying Officer Guy Harris, R.A.F.

BUCKINGHAM PALACE, Dec. 11th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

THE DISTINGUISHED SERVICE ORDER.—Wing Comdr Charles Stanford, R.A.F. (late Surgeon-Comdr, R.N.); Flight Lt. Alfred Whistler, Dorsetshire Regiment, attd. R.A.F. (also received the Distinguished Flying Cross and Bar)

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Member.—Military Division.—Maj. Errol Knox, Aust.F.C.

The King then conferred decorations as follows :—

THE MILITARY CROSS AND THE DISTINGUISHED FLYING CROSS.—Flight Lt. Edmund Tempest, R.A.F

THE DISTINGUISHED FLYING CROSS.—Sqdn. Ldr. Andrew Walser, R.A.F.; Flight Lt. Douglas Lapraik, R.A.F.; Capt. William Scott, R.A.F.; Capt. Robert Sharp, R.A.F.; Flight Lt. John Yonge, R.A.F.; Lt. Sydney Bull, R.A.F.; Flying Officer Peter Haworth, R.A.F.; Flying Officer Norman Mawle, R.A.F.; Lt. Thomas Scott, R.A.F.; Flying Officer Reginald Skelton, R.A.F.; Lt. Robert Spence, R.A.F.; Lt. William Steele, R.A.F.; Lt. Eric Walker, R.A.F.; Flying Officer Edward Waring, R.A.F.; Lt. Ignatius Welby, R.A.F.; Lt. George Welsh, R.A.F.; Lt. Harold Wickett, R.A.F; Lt. Paul Wilkins, R.A.F.; Lt. Norman Williams, R.A.F; Lt. Roy Wilson, R.A.F.; Lt. Lawrence Wingfield, R.A.F.; Sec. Lt. Leslie Thres, R.A.F; Sec. Lt. Ronald Turner, R.A.F.; and Sec. Lt. Alfred Watters, R.A.F.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made :—

Dec. 10th.—Art. Engrs.—R. V. Nelson, to "Furious," addl., for "Alexander," on reducing to reserve complement, Dec. 5th.

R.A.F.—Flight Lt. (A.)—D. G. Donald, to "Vindictive," Aug. 1st.

Gunner.—E. W. Roberts, to "Furious," for "Alexander," Dec. 11th.

Dec. 11th.—Engr. Lieut.-Comdr.—J. D. Grieve, to "Vivid," addl., for "Eagle," Dec 10th.

Art. Engrs.—W. R Switzer, to "Vivid," addl., for "Eagle," Dec. 30th.

Wt. Mech.—A. M. Stuart, to "Vivid," addl., for "Eagle," Dec. 30th.

R.A.F.—Flying Officer (S.)—H. L. Macro, to "Pegasus," Dec. 2nd.

Flying Officers (A. and S.)—S. C. Strafford and W. R. Curtis, to "Pegasus," Dec. 2nd.

O. Officers (O.)—E. B. C. Betts, L. Ritson, E. J. Garner, and D. R. W. Thompson, to "Pegasus," Dec. 2nd

Lord Jellicoe's Report.

In the course of Lord Jellicoe's report to the Commonwealth Cabinet upon the sea defence of Australia, it is recommended that the Naval requirements of Australia shall be divided into three classes and that the first of these, "the striking force," shall contain one aircraft-carrier to every two units.

Lord Jellicoe also recommends the formation of a Far Eastern Fleet which shall contain four aircraft-carriers.

No. 6 Wing R.N.A.S. Dinner.

On Saturday, Dec. 13th, at the Trocadero Restaurant, members of No. 6 Wing, R.N.A.S., Otranto, Italy, held their first re-union dinner. Col. G. H. K. Edmonds, D.S.O., the first C.O. of the wing, presided, and among those present were Comdr. Murray Sueter, R.N., Col. A. Longmore, D.S.O., Comdr. Beuttler, R.N.R. Maj. Pulford, Maj. Mackenzie, and Maj. Leslie. In all some forty members attended.

Such was the success of the dinner that it was unanimously determined to make it an annual affair, and it is hoped to hold the next dinner on the second Saturday in December of next year.

MILITARY.

The Afghan War.

The following is taken from some telegrams, received on Dec. 8th from India, which contained information regarding the state of affairs on the North-West Frontier :—

"Minor raiding by Mahsuds continues, and a party of 100 strong are reported out to attack the aerodrome at Bannu. The houses of several of the chief Mahsud Maliks are reported to have been destroyed by recent air operations.

The Piti Madda Khel and Hassan Khel sections of the Tochi Waziris, inhabiting the Upper Kaitu valley, refused to comply with our terms, and were effectively bombed on the morning of Dec. 6th, when 2¼ tons of bombs were dropped and 2,100 rounds of small-arm ammunition fired. These were the only sub-sections of Tochi Waziris who had remained recalcitrant.

Air operations against the Mahsuds continue with good effect."

There is no indication that this news is official.

Owing to the Mahsuds' decision, at a Jirgah held more recently than the one of Dec. 8th, to accept the British terms, aerial operations have been provisionally suspended.

According to Reuter it appears probable that the aerial bombardment of Afghan towns and villages is not alone sufficient to bring about the surrender of the tribes, and it is now likely that troops will be taken into the Mahsud country.

AIR FORCE.

Summary of the Results of the R.A.F. Mail Services.

The following communiqué was issued by the Air Ministry on Dec. 12th. THE AEROPLANE takes no responsibility for the official phrasing :—

Some interesting detailed statistics are now available regarding the six months running of the Folkestone-Cologne mail service which was terminated towards the end of October.

The actual cross-Channel service was inaugurated on March 1st, and was the development of various mail delivery services which had for some time previously been in operation in France and Belgium. Prior to March 1st the mails were shipped to France and taken by ground transport to the aerial distributing centres. These, services, however, were not carried out regularly for any lengthy period over particular routes but were constantly being changed as the movement of troops and progress of demobilisation rendered necessary. It is, therefore, not possible to give any detailed and useful statistics for the period, before March 1st but it is of interest to note that out of 1,023 trips commenced only 45 were uncompleted from any cause. This represents an average percentage of successful flights of not less than 96. If the fact be borne in mind that all these flights took place over difficult country, and in the bad weather of the winter months December to March, this result is particularly good.

Three squadrons were at first employed on the cross-Channel service—Nos. 18, 110, and 120, equipped with D.H.9a, D.H.9, and D.H.4 machines.

From March until July the mails were not usually carried direct from Hawkinge to Cologne, but were flown from Hawkinge to Maisconcelle (later on Marquise) and there transferred to other machines for Cologne.

Neither Maisconcelle nor Marquise, however, were half-way stages, both being considerably nearer Hawkinge, so that the longer and more arduous portion of the journey, including that over the range of high hills between Lille and the German frontier, had to be negotiated by the pilots of Nos. 110 and 18 Squadrons at Maisconcelle and Cologne respectively.

The distance from Hawkinge to Maisconcelle was roughly 67 miles and from Maisconcelle to Cologne 229 miles—a total distance of 296 miles against 250 miles over the non-stop route adopted later. The average time for the first stage was one hour, and for the second two hours and a quarter.

From July 22nd the squadron at Marquise ceased to operate and the through service between Folkestone and Cologne was thenceforward regularly flown until the termination of the aerial mail. Even before that date many individual through flights had been successfully made.

During the six months' flying subsequent to March 1st, 1,842 trips were made, comprising rather over 3,000 hours in the air. Up to 460 lb. weight of mails were carried per machine trip.

Of the 1,842 flights begun, 96 per cent. were successfully completed. Of the 4½ the percentage of flights which failed slightly over 2 per cent. were due to engine trouble, or mechanical defect and under 2 per cent. to bad weather.

Of the through flights from Folkestone to Cologne of 270 begun 267 were completed, or only 1 per cent. of failures.

The regularity of service was also good. Mails were carried from Folkestone on 146 out of the 182 days under review and from Cologne on 139 days. The percentage works out at 80.2 per cent. and 76.4 per cent. respectively. The times of departure of the aerial service were fixed so that in the event of the weather being impossible for flying the mails could be sent by rail or boat without delay.

A striking feature of this service was its immunity from casualties. During the six months covered, only one pilot and one passenger were injured, both in the same accident.

Although this service has provided valuable data on many of the points which arise in the working of a commercial service, it has been found impossible for various reasons to deduce actual running costs per lb. of mail carried. For instance, the total possible load of the machines in use was 600 lb., but not more than 460 lb. were ever carried in one machine and very often considerably less; and again, of each machine available was not employed as regularly or as frequently as it would have been on a commercial service.

The figures would not therefore have represented true values for the cost per ton carried.

The London-Paris Service.

Details have also been prepared of the London-Paris service for the same period.

This service was carried on by two composite squadrons one at Hendon—afterwards moved to Kenley—and the other at Buc, near Paris. The machines used on this service were chiefly D.H.4s, but Handley Page, Martinsyde, and Bristol "Fighter" types were also employed—all the machines being fitted with Rolls-Royce engines. This service differed from the Cologne service as being primarily for passenger work though official mails and dispatches were also frequently carried.

The total number of trips made from the commencement of this service to the end of August amounted to 744, while 934 passengers and 1,028 mail bags were carried. A certain number of these flights were to various other French or Belgian towns; 90 per cent., however, were to Paris.

Of the flights made between March 16th and the end of August—556 were completed and 52 failed; 13 on account of weather conditions and the remainder owing to mechanical defect or engine trouble. The percentage of successful trips therefore amounted to 91.

In this service machines were not working to their full capacity. Naturally, owing to this fact, the resulting cost (which was obtained for another purpose) is higher than would otherwise have been the case, but the data so obtained are interesting and valuable as roughly indicating the possibility of commercial aviation as a paying proposition, though it has not been possible to work out the costing in great detail.

In arriving at these figures allowance has been made for depreciation on buildings and plant of 5 per cent. per annum on original cost, as well as rates and upkeep. Depreciation on the machines employed has been charged for the one month's running under review at 1/12th of their initial cost, thus allowing a complete write off of each machine in one year, while that on engines has been taken at 1/36th of initial cost, allowing lifetime as three years. This, of course, is in addition to the full charges for all personnel employed and all stores consumed.

Taking the average weight of a mail-bag as 25 lb. and of a passenger as 130 lb. and working on the figures of May as being a representative month on this service, the actual cost worked out to one shilling and a halfpenny per ounce per 205 miles—the actual distance between Kenley and Paris.

During the six months there were five accidents on the service in which three pilots and one passenger were killed and two pilots and one passenger were injured.

Taking the combined results of the two services it appears that of 2,450 trips begun since March 1st no less than 2,331 were successfully completed, the proportion of failures amounting only to 5 per cent., the percentages due to weather and mechanical defect being 2.8 per cent. and 2.2 per cent. respectively.

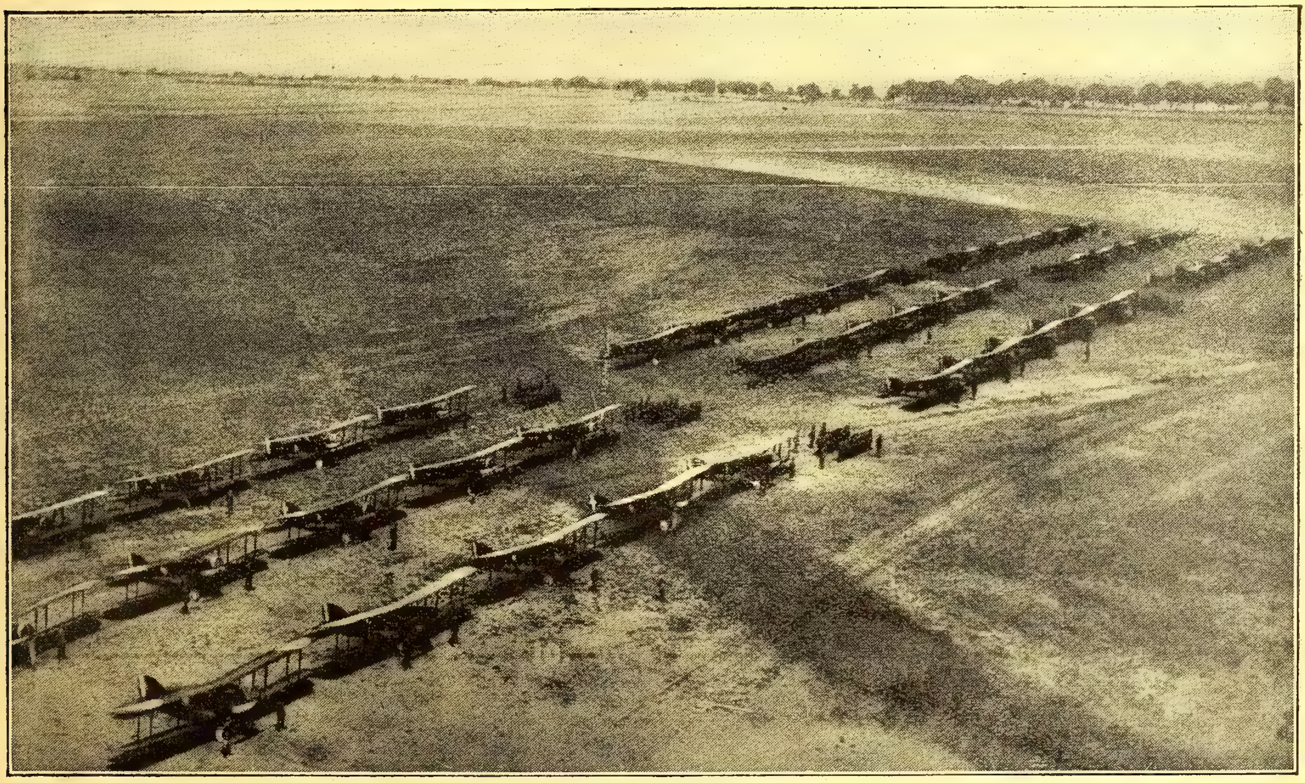
As the early months of this period provided particularly bad weather this result is satisfactory.

100 Squadron R.A.F.

The first annual dinner for the officers of 100 Squadron will be held at the Holborn Restaurant, London, on Jan. 3rd, 1920, at 7 p.m., the dinner for W.O.'s, N.C.O.'s and men on Dec. 31st, 1919, at 6.30. Will all members who can attend please write at once to Captain C. Gordon-Burge, Dent-de-Lion, Westgate-on-Sea, Kent?

A Presentation.

Sir Chas. Wakefield, Bart., has presented set of trophies, cups and medals to the Royal Air Force for a series of boxing



AN AERIAL REVIEW.—Three Squadrons of Bristol "Fighters" at Spiel, Cologne, awaiting inspection by General Sir William Robertson, G.C.B., G.O.C. the Army of the Rhine.

competitions amongst the officers and men. The trophies, cups, and medals have all been specially designed and the gifts have been accepted by the Air Council, and the trials will begin shortly. The trophies are on view at the premises of Skinner and Co., Ltd., 34, Bond Street, W.1.

A Walking Championship.

Mr. W. Hehir, R.A.F., of the Surrey A.C., won the Southend Harriers' open handicap on Dec. 13th. The handicap was held over the roads in the Chelmsford district, and from scratch Mr. Hehir covered 7 miles 1,000 yards in 58 min. 19 sec.

AUSTRALIA.

The Air Ministry announced on Dec. 13th that Capt. Wrigley, Australian Flying Corps, with Serjeant Murphy as observer, had just completed a flight from Melbourne to Port Darwin. The flight was made on a B.E. 2E machine, with a 90 h.p. R.A.F. engine. This machine was four years old. This is the first time that Australia has been traversed by air.

FRANCE.

The New Organisation of the Aerial Arm.

The aerial arm will consist in future of 11 regiments. Five of these are allocated for observation duties and will be under the orders of the corps commanders in whose areas they are stationed. Each regiment will be commanded by a colonel (in principle), and each will consist of four groups divided into two or three escadrilles. Each group will be under a lieutenant-colonel and captains will command the escadrilles.

The five regiments described above will be stationed as follows :—

1 Regiment : Tours (Commandant Muiron).
2 ,, Le Bourget (Commandant Delafond)
3 ,, Lyon (Commandant Benoit).
4 ,, Dijon (Commandant Maginel).
5 ,, North Africa (Commandant Rolland).

Two further regiments will be formed at a later date.

In addition there is an independent Force (presumably directly under the orders of G.H.Q.), consisting of three regiments for aerial fighting and three bombing squadrons, all under the command of Colonel de Vaulgremand. The regiments will be commanded as follows :—1st Fighting, Commandant Brocard; 2nd Fighting, Commandant de Marancourt; 3rd Fighting, Captain Bladigniere; 1st Bombing, Commandant Vuillemin; 2nd Bombing, Commandant Galet; 3rd Bombing, Commandant Laurence.

Aerial Surveying.

Commandant Vuillemin and Lieut. Dagneau, whose arrival at Algiers was reported last week, left that place for Constantine, Biskra and Lake Chad on Dec 14th. They took with them mechanics and an observer. Landing places have been arranged. The distance to Lake Chad is roughly 950 miles.

ITALY.

The Italian correspondent of The Aeroplane writes :—

War Losses of Italian Airships.

The following referring to the end of 12 of the 25 Italian airships mobilised has appeared since the censorship was revived here.

V.1 (Royal Italian Navy).—Brought down by artillery fire at Pola on Aug. 5th, 1915, and fell into the sea. Her crew of five were made prisoners.

P.6.—Burnt in her shed at Campalto by Austrian aircraft, Aug., 1915.

M.2 (Royal Italian Navy).—Brought down by the combined efforts of aeroplane and artillery fire on the return from a trip to Fiume at Lussin on June 8th, 1915. Lost two dead, one wounded, and four prisoners.

M.3 ("City of Ferrara").—Hit by artillery fire in the Vippacco Valley on May 23rd, 1915. Fell to the earth at Codroipo.

M.4.—When returning from a bombing raid at dawn on May 4th, 1916, was hit by artillery fire near Gorizia. The heroic end of Capts. Pastine Casella and Coturri with pupil Pilot Pasquali and Serjt. Maj. Motorist Berardis is an Italian war epic.

M.5.—Burnt at Turin on June 3rd, 1916, owing to collision in the air with an aeroplane. The C.O. perished with five others, and five men were wounded.

M.7.—Was torn away from her anchorage by a hurricane and lost at sea, Aug. 16th.

M.8 (Royal Italian Navy).—Was set on fire in her shed and burnt in Sept., 1917, by Austrian aeroplanes.

M.10.—Hit by artillery fire at Prosecco and fell at Latisana, Sept. 22nd, 1917.

M.12.—Was hit by artillery fire from the Hermada district and was wrecked in the sea at Grado on the morning of May 22nd, 1917. Commander Valle perished with her, as also navigating officer Soli.

M.13 (Royal Italian Navy).—This vessel, too, was set on fire and burnt in her shed by enemy aeroplanes, Sept., 1917.

M.17 (Royal Italian Navy).—Fell into the Venetian lagoons on the night Feb. 3-4th, 1918. Thought to be a victim to a shell from Motta di Livenza.

The comparatively small total of 13 deaths and 10 prisoners divided among 12 biggish airships shows the comparative safety of the lighter-than-air vessel even in warfare. It is noteworthy, too, that M.1 and M.6 are still in commission and going in for educational work—T. S. H.

POLAND.

Lieut. Edwin Pike Graves, late R.A.F. pilot, was killed at Lemberg while taking part in an exhibition flight given by the Kosciuszko squadron, the squadron of American fliers serving with the Polish army against the Bolsheviks. Mr. Graves, who is an American, joined the Koscinszko squadron shortly after he was demobilised from the British Royal Air Force.

The right wing of an Austrian-made Albatros D III which he was flying came off while doing a roll. He retained his presence of mind, loosened his safety belt and jumped with a parachute. Unfortunately the machine was only 150 feet from the ground by this time and he struck the ground just as the parachute was opening. He was instantly killed. He was engaged to Miss Dulcie Huntington, of West Kensington, London.—P. B.

U.S.A.

An Echo of Recent Hostilities.

Mr. Daniels, Secretary for the Navy, has approved the sentence of dismissal passed by the Naval Court-martial upon Capt. Edmund George Chamberlain, U.S N.A.S. The court-martial was held, partly in Paris, early this year, and Capt. Chamberlain was tried for certain statements made with regard to a somewhat extraordinary exploit in aerial warfare in which he claimed to have taken a principal part.

A Service Sale.

The Navy Department are to sell some two hundred seaplanes and flying boats, and a number of engines and accessories. At a sale held on Sept. 22nd twenty-seven seaplanes and a considerable quantity of equipment were sold, out of a total of two hundred and nineteen seaplanes and flying boats and four hundred and forty-one engines that were offered, the remainder being unsold as the bidding did not come up to the appraised value.

AIRCRAFT IN PARLIAMENT

Dec. 8th.—The following written answer was given :—

AIR MAIL SERVICE (FEE).

Lieut.-Comdr. KENWORTHY asked the Postmaster-General whether he is aware that the Assistant Postmaster-General in the Government of the United States of North America has stated that by use of aeroplanes to carry mails between New York, Chicago, and Washington at two cents a letter a saving will be effected of over 1,500,000 dol. in 1920 over all other methods of transit; and, in view of this statement, will he reconsider the air-mail fee of 2s. 8½d. between England and France with a view to popularising this service and placing it on a commercial footing.

Mr. PEASE : The sum of 1,500,000 dol. referred to by the hon. Member is the estimated value of the travelling post offices and other railway rolling-stock and the time of post office sorters which will be rendered unnecessary by the provision of the additional aeroplanes recently ordered by the United States Post Office for its air mail services. Payment for the conveyance of mails by rail in the United States is made on a basis different from that in force in this country, but I do not gather that the sum indicated is a net saving consequent on the use of aeroplanes for the conveyance of mails. The air mail service between London and Paris is experimental, and the arrangements are of a temporary character and will be reviewed after six months' working. I hope that when permanent arrangements for the service are made it will be possible to reduce the amount of the special fee.

* * *

Dec. 9th.—The following oral answer was given :—

HELICOPTER FLYING-MACHINES.

Lieut.-Comdr. KENWORTHY asked the Secretary of State for War whether he is aware that the French Government have recently granted a sum of about £4,000 to aid inventors in carrying out experiments with the helicopter type of flying-machine; whether the Air Ministry are alive to the very great importance of such experiments; whether all encouragement is being given to British inventors who may wish to experiment with this system; and whether any sums of money have been granted for such experiments.

Mr. CHURCHILL : the answer to the first and second parts of this question is in the affirmative. The answer to the third and fourth parts is that any proposals for a helicopter type flying-machine brought to the notice of the Air Ministry are sympathetically considered and such financial assistance as appears proper is given. Adequate financial provision has already been made for the purpose. Since June, 1916, this line of research has been continually explored, and I am personally familiar with the details of the progress made with these experiments, in which, while Minister of Munitions, I took a great interest.

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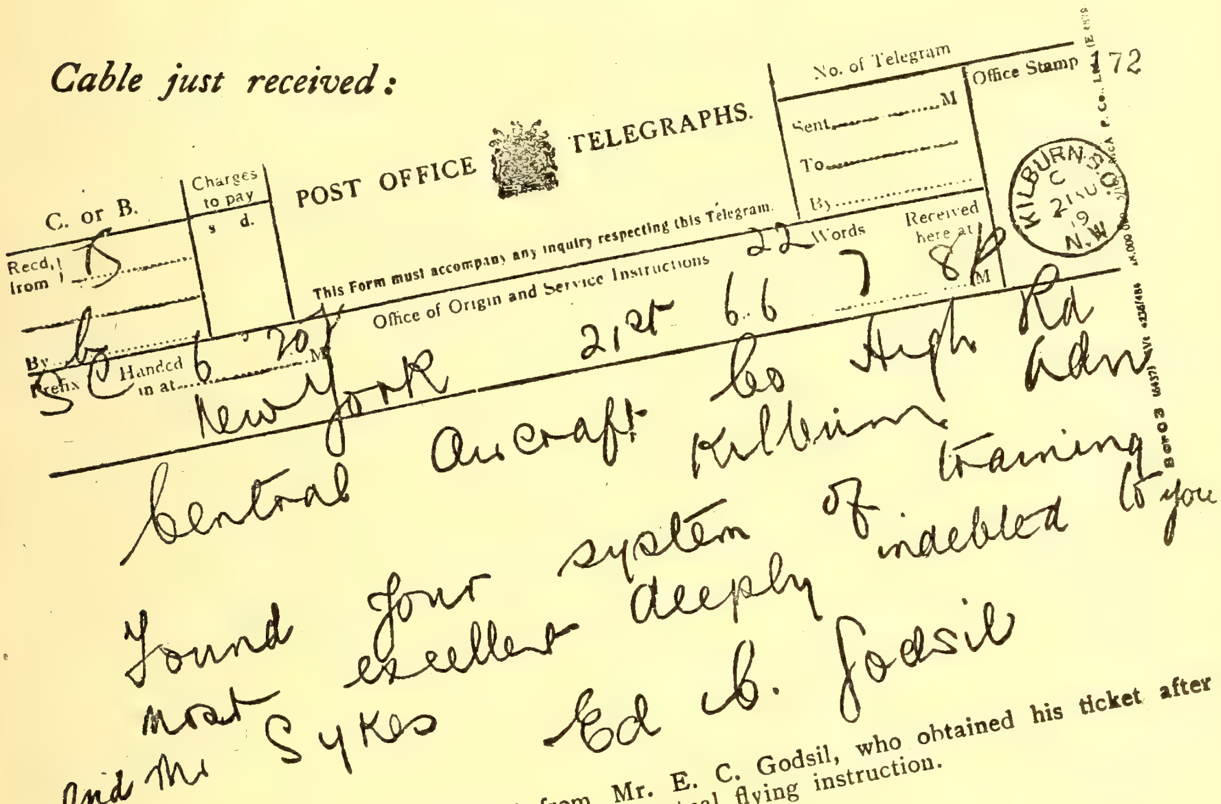

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Dec. 10th.—The following oral answers were given :—

PARIS EXHIBITION (BRITISH AEROPLANES)

Lieut.-Comdr. KENWORTHY asked how many British aeroplane firms are showing at the Paris Exhibition; whether the number is satisfactory; and what steps are being taken to encourage and assist British firms to attend foreign exhibitions of aircraft.

Capt. GUEST (Joint Parliamentary Secretary to the Treasury) : I have been asked to reply to this question. The answer to the first and second parts is that six British aeroplane firms are showing at the Paris Exhibition, and that on the whole this number of exhibitors may be taken to be satisfactory. The Society of British Aircraft Constructors was unable to obtain sufficient space on the ground floor for a corporate exhibit, and, therefore, are not exhibiting. In regard to the last part of the question, offers of assistance were made to the Society of British Aircraft Constructors at a meeting held early in October.

AIR MINISTRY—STORES DEFICIENCIES.

Mr. RAPER asked the Secretary of State for War how much has been written off since the Armistice as a charge against the public for stores deficiencies of air squadrons stationed in Great Britain and of the various air store depots and parks which were at that time in existence.

Capt. GUEST : This information would take some time to collect, and I am unwilling at present to throw additional work on the Air Ministry and local Air Force staffs; but if my hon. friend presses for it I will obtain the information and send it to him

Mr. RAPER . Can the hon. and gallant gentleman give us some rough idea of the amount ?

Capt. GUEST : No, I cannot, and I do not think a rough idea is what the hon. Member requires.

Mr. RAPER : When can we have these particulars ?

Capt. GUEST : When the pressure on the Ministry is a little less than it is now.

COMMERCIAL ORGANISATION.

Mr. RAPER asked the Secretary of State for War if he will now appoint a small but permanent committee, composed of two or three hon. Members of this House and two or three gentlemen outside the House who have a knowledge of commercial organisation, to assist the Air Ministry authorities in finance and business matters generally.

Capt. GUEST : I have nothing to add to the answers which I have already given to my hon. friend in reply to similar questions on March 31st and April 3rd last.

Mr. RAPER : Is it not a fact that the last answer given was that this question was under discussion ?

Capt. GUEST : Yes, sir; and it is still under consideration.

THE DOUGLAS-PENNANT CASE.

In view of the irrelevance of the majority of the evidence given it has not been considered desirable to publish periodical accounts of the progress of this case. Much paper would have been covered by material of little relative importance in the progress of the world, and it would, in consequence, have been necessary to exclude from the paper news of greater value.

Miss Douglas-Pennant was appointed Commandant of the Women's Royal Air Force on May 4th, according to an Air Ministry's circular issued through the Press Bureau. This announcement was, in the view of the Committee, " an instance of the want of accuracy on the part of the Air Ministry, of which we have had more than one illustration in the present case." She had not made up her mind to accept any such post nor did the office exist in fact. The rank then in existence was " Chief Superintendent." She was never given a formal appointment , and her office was therefore not governed by King's Regulations in the paragraphs dealing with removal for misconduct. " She never signed the form of enrolment App. A, pp. 41 to 43 of F.S. Pub. No. 14; she was never enrolled; and if she wore without objection, as we believe she did, the uniform of the Women's Royal Air Force, that is but another illustration of the want of system in the proceedings of the Air Ministry. . . . Her employment was only a temporary employment by way of loan." (From the National Health Insurance Commission). . . . "The Minister could dispense with her services at any time if, in the honest exercise of his discretion and in the interest of the public service, he thought it right to do so."

Omitting the intervening history, it is sufficient to say that Lord Weir dispensed with her services on Aug. 28th. After consideration she felt that she had been unfairly treated, and in person and through friends and supporters she successfully agitated for the formation of a Select Committee of both Houses to inquire into her grievances. Before this Committee she laid a mass of charges and complaints, accusing officers of all ranks with, in some cases, intrigue, in others incivility, and in a few instances immorality.

The Committee went into the specific charges of obstruction in detail, and it was shown by means of minutes in the files that these charges were unfounded.

They then examined the charges as to immorality in the W.R.A.F. and the support said to be given thereto by certain general officers. Para. 57 of the Report describes Miss Douglas-Pennant's action in this matter :—

"Miss Douglas-Pennant could not produce a single minute to M.G.P. or any superior officer calling his attention to the existence of immorality and to her being powerless to prevent it. Sir Godfrey Paine (her witness) says that she never mentioned immorality to him, that he ' had a suspicion, but she certainly did not accuse any individual or any particular hostel, or anything like that. It was general.' She was asked to name any witness who could give evidence upon the subject. She named Mrs. Beckett. She did not call Mrs. Beckett. She named Mrs. Digby Read. She did not call Mrs. Digby Read."

The following paragraph from the Report (para. 121) summarises the service character of Miss Douglas-Pennant and may well end this piece :—

" Miss Douglas-Pennant is, upon the materials before us, shown, we think, to be a woman full of zeal and activity, much impressed with her own importance, very reckless in her imputations upon others (of which we have had grievous examples in this case), and one not at all likely to get the best out of those with whom she had to work or over whom she had authority. The story of the intrigue against her has originated, in our opinion, in her distortion of events and from her incapacity to see things in their true perspective. This distortion reaches its climax when she accuses Sir Auckland Geddes of being a party to the intrigues. There is no doubt about it. She says so (Q. 1364, p. 74), and the same with Lady Rhondda (Q. 1365, p. 74)."

ARMS AND THE MAN.

Mr. Robert Loraine, actor-manager (better known, perhaps, to readers of this paper as Lieut.-Col. Robert Loraine, D.S.O., M.C., late R.F.C.), has achieved, at the Duke of York's Theatre, another success in "Arms and the Man," which, if not perhaps equal as a *tour de force* to "Cyrano," is, in one's personal opinion, an even better piece of acting. Mr. Loraine shows his ability as a manager no less than as an actor in selecting this particular play for production at this particular moment when a little of the glamour of soldiering has passed and when people are more inclined to regard the soldier as an integral part of the composition of the nation and as a man who follows a profession as a profession, free from high falutin' ideas. Both the play and the acting will do good.

The story of "Arms and the Man" is probably best known to the majority of Londoners by way of "The Chocolate Soldier," and there will doubtless be those who will regret that Mr. Loraine has omitted to interpolate into Mr. Bernard Shaw's text the one tune which made that saccharinated opera the craze of the crazy, but that is merely by the way.

Mr. Loraine is to be particularly congratulated on having chosen his companions in the cast. Miss Campbell is adequately "stagey" as Raina, but she might perhaps make a greater effort to drop her staginess when she is "discovered" in the last act by the Swiss captain.

Mr. Gerald Lawrence is, one thinks, inclined to over-do the staginess of his part. His method of playing reminds one somehow of the famous American critique of a production of "Romeo and Juliet" in which the critic remarked that "with a little assistance from the stage carpenter the Romeo could adequately have played the balcony." The untutored Bulgar may be grandiloquent, but one doubts whether he is ever deliberately "stagey."

Miss Holmes-Gore, as Louka, gives one of the best performances that has been seen for many years. She manages to combine skilfully the aspect (albeit very charming) of the semi-savage Bulgar with the manners of a tea-shop waitress. When so many important parts are wasted on incompetent actresses it is a pity that so little has been seen of Miss Holmes-Gore, who could play so many parts so much better.

Miss Beverley Sitgreaves as Raina's mother was as near the perfect person for the part as one could imagine, and Mr. Arthur Whitby as the servant, Nicola, is wholly excellent. The performance of Mr. M. R. Morand as Major Petkoff, the Bulgarian heavy father, was a perfect gem as a character study. One remembers Mr. Morand giving equally fascinating character studies in the Grossmith parts of Gilbert and Sullivan operas, and in "The Rose of Persia." It is a treat to see such acting as his.

One is a trifle doubtful as to whether the fashions of the Servo-Bulgarian war period were precisely those worn by the ladies of the cast. They struck one as belonging to an earlier date, but perhaps the Paris fashions took a year or two to reach Sofia. Also one has doubts as to whether the Servian officers were French képis. One's personal recollection of the pictures of the period is that the Servians wore a head-dress resembling the Austrian shako, but one assumes that Mr. Loraine made the necessary research into the costumes of the period before dressing the parts.

Be that as it may, the performance is wholly excellent, and Mr. Bernard Shaw's pitiless logic and biting humour will probably be better appreciated to-day, now that everybody has been closely in touch with militarism in one form or another, than it was when the play was last staged in London.—

C. G. G.

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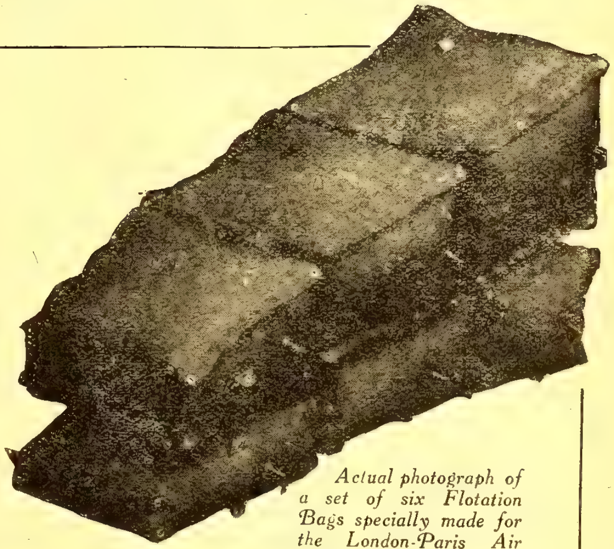

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Flights scheduled, 240; flights successfully accomplished, 189; prevented by weather, 27; interrupted by weather, 19; interrupted by mechanical defect, 5; approximate mileage, 52,290; average speed (m.p.h.), 102.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow	Pass
Dec. 8th	DH9.	Lt. Campbell-Orde	12.40 p.m.	2.45 p.m.			Mail
	DH9.	Lt. Lindley	45 m.p.h.N. wind	squally	12 20 p.m.	3 35 p.m.	Mail
Dec. 9th	DH4a.	Lt. McMullin	12.30 p.m.	2.50 p m.			2
	DH9	Lt. Tebbit	12.45 p.m.	3 00 p.m.	low	fog	Mail & mec
	DH9.	Lt. Powell			12.15 p.m.	2 50 p.m.	1 and Mail
Dec. 10th	DH16.	Capt. Baylis	12 55 p.m.	anded L'mpn 1.55 p.m.	Thick fog in Paris		2 and Mail
Dec. 11th	DH9.	Lt. Robins	12.40 p.m.	3 20 p.m.			1 and Mail
	DH4a.	Lt. Bradley	Bad visi	bility	12.15 p.m.	crashed Caterham	1 and Mail
Dec. 12th	Thick fog in Channel and N.E. France. No flying possible.						
Dec. 13th	Weather totally unfit for flying.						

DEC. 10th.—The mails and parcels, which were in the D.H.16 piloted by Capt. Baylis, who landed at Lympne on account of the weather, completed the journey by air on the next morning.

DEC. 11th.—Lieut. S. B. Bradley left Le Bourget with one passenger, mails, and parcels. The pilot encountered very bad visibility of the Surrey Hills and unfortunately crashed at Caterham. The passenger, who was killed instantly, was Mr. George F. Rand, a Buffalo banker. Lieut. Bradley was seriously injured and died in Croydon Hospital on the morning of the 12th inst.

The mails and parcels from the crashed machine were duly delivered the following morning.

The First Inquest.

During the inquest held by the East Surrey Coroner at Caterham on Dec. 15th on the body of Mr. George S. Rand, a banker of Buffalo, New York, who was killed in the aeroplane accident while flying from Paris to London on Dec. 11th, Mr. Theophilus, solicitor, who appeared for Aircraft Transport and Travel, Ltd., said that the aerodrome at Kenley was most unfortunately situated, owing to local conditions with regard to the hills and the frequent mists.

Major Cyril Patteson, of the Aircraft Co., stated that the Surrey hills there were 800 ft. high, and, therefore, liable to the gathering of a lot of clouds. It might be perfectly fine and suitable for flying at Croydon on that afternoon, while at Kenley it was very cloudy and dangerous for flying.

The Coroner returned a verdict of "Accidental death."

The inquest on Mr. S. B. Bradley, the pilot of the machine, was to be held on the afternoon of Dec. 17th.

The Handley Page Services.

The regular service to Paris and Brussels will be available up to the day before Christmas for anyone who wishes to make the journey. In order to afford the pilots protection against the bad weather constantly encountered during the winter months, cowlings fitted with Triplex Safety Glass windows are being built over the cockpits of the machines on the services.

LONDON-PARIS.—Dec. 9th.——Capt. Jones piloted nine passengers and 124 lb. of freight from London to Paris. Sir George Noble was one of the passengers and experienced his third flight to Paris in a Handley Page machine.

During the week ended Dec. 10th 34 passengers and 1,245 lb. of freight were carried.

LONDON-BRUSSELS.—During the week ended Dec. 10th nine passengers and 434 lb. of freight were carried.

BROOKLANDS.

Everything in the garden was lovely at Brooklands on Dec. 10th. The sun shone brightly, but with seasonable heat. The wind was fresh; and the smell and sight of the pines exhilarating. The sentry at the gate did not die of exhaustion through shouting down the telephone to the R.A.F. Adjutant, asking permission for two on a "stink-wheel" to enter. And so two entered.

Just inside the entrance were found several beautifully camouflaged fuselages of Sopwith "Salamanders," which were being assisted onto R.A.F. lorries for a little country drive. Nothing of interest, except in the way of scenery, was then seen, until the first sheds were reached.

The Sopwith sheds contain many and interesting machines. The most excellent lines of the "Pup" are seen in the "Snapper" and the "Dove." There were several training machines there, a useful-looking monoplane, and the somewhat dismantled Schneider Cup machine.

Martinsydes, Ltd., engaged attention first, for out somewhere near the centre of the aerodrome was the first and only F.6. The machine had been hastily rigged for photographing purposes, and had a bucket containing sand hooked to its tail to prevent it from flying away. It is a sporting two-seater biplane of very pleasing appearance, somewhat like the F.4 fighter, and fitted with a 300-h.p. Hispano-Suiza engine.

In the interior of the Martinsyde shed is quite a museum. Besides an F.5 and another machine there are quite a number of fuselages of former machines, including the last of the "Tinsides." On the rear wall there are numbers of airscrews, some of great antiquity. At the works a new sporting type is being built, which is to have an engine of considerable horse-power.

In the early afternoon four Vickers "Vimy" machines, the first piloted by Sir John Alcock, K.B.E., D.S.C., set off for an aerodrome in Norfolk.

EASTBOURNE.

It is announced that the Eastbourne Aviation Co.'s flying school will be re-opened on Jan. 1st, 1920. It is proposed to include a course of tuition for aviatresses.

LONDON.

HOUNSLOW.—The War Office require the aerodrome at Hounslow for cavalry training purposes, and so the civil station will have to be moved. Although the inhabitants of Kenley are so adverse to aircraft, it is very probable that the new terminus will be on their Common. The site is said to be 300 ft. higher and less liable to become fog-bound than Hounslow. On the other hand it is in most dangerous country and is frequently hidden by low clouds.

It has been decided by the Directors of A. V. Roe and Co., Limited, that ordinary pleasure flying is to cease for the winter months.

Though there are many days during the winter on which flying is very enjoyable, such days are a minority in a British winter; and it is very doubtful whether the public is yet sufficiently educated in air matters to grasp the fact that a flight on a clear, frosty day, especially if a light fall of snow has taken place, is one of the most exhilarating of winter sports. It would certainly not be worth while to keep aerodromes open on the chance of a few passengers desiring winter flights.

This decision, however, does not mean that all the Avro machines will be sent away from Hounslow. Arrangements will be made for flying pupils to continue their courses of instruction, and demands for special flights can be met.

AUSTRALIA.

The Progress of the Vickers Vimy.

A Reuter message states that Captain Ross Smith was seen at Maronboy, to the north of Daly Waters, on the afternoon of Dec. 13th, proceeding in the direction of Port Darwin. It is therefore believed that engine trouble developed and that Captain Ross Smith decided to return to Port Darwin,

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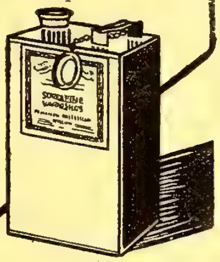

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but instead successfully landed in the bush. He evidently resumed his voyage on the next morning, as he was subsequently seen passing over Daly Waters going southwards.

Government Assistance.

The Australian Government are encouraging civil flying by giving free instruction to returned soldiers taking up commercial flying. Many aeroplanes have arrived in the country, mostly Sopwiths.

INDIA.

The following "unofficial communiqué" was issued by the Air Ministry on Dec. 12th :—

Civil Aviation.

It is understood that the Government of India have decided that the development of civil aviation in India will in so far as mails are concerned best be attained by granting a monopoly for the carriage of mails throughout India to a single air transport company, which will not be linked with any aircraft manufacturing company. The monopoly will be limited to the carriage of mails, the postal rates for which will be fixed by the Government of India.

In fixing rates for the carriage of goods other than mails and for the carriage of passengers, the company operating the mail monopoly will have a free hand in open competition with any other companies which may be established for such traffic.

The Air Board.

An Air Board in India has been constituted as a purely advisory body to advise the Commerce and Industry Department. This Department now deals with all questions concerning civil aviation. The members of the Board consist of the Secretary to the Government of India (Commerce and Industry Department), the Director-General of Posts and Telegraphs, India, the Officer Commanding the Royal Air Force, a representative of the General Staff, and the Financial Advisor, Military Finance Department. There is also a Secretary of the Board.

THE ARGENTINE.

A Franco-Argentine Company.

An Argentine officer, Lieut. Houtsch, and a Frenchman, M. Jean Guichard, have formed a company in Buenos Ayres to instal a series of aerial transport services. The capital of the company is 1,000,000 piastres, of which three-quarters have been subscribed.

The Buenos Ayres-Montevideo Service.

An aerial service between Buenos Ayres and Montevideo has just been started. M. Jansen, the French Minister Plenipotentiary, M. Holf, the French Consul at Buenos Ayres, and Colonel Precardier, Chief of the French Mission, were present at the inauguration ceremony.

BELGIUM.

The Congo Air Service.

A Reuter message from Brussels dated Dec. 15th stated that the balance of the staff to inaugurate the air postal service between Leopoldville and Stanleyville in Belgian Congo would embark at Antwerp on Dec. 16th in the steamer "Albertville." The party included the two aviators MM. Franz Orta and Bastin, two mechanics and two joiners.

It is hoped that the air mail service will be in operation before the end of January.

CHINA.

The first Handley Page aeroplane was completely assembled and flown on Dec. 6th in Peking. One of the passengers was Mr. T. A. Barson, the chairman of the Peking firm whose enterprise was responsible for the first important aviation deal with China.

The machine was put together by Chinese workmen unable to converse with the foreign mechanics in charge, and there was some anxiety about the trial flight, which, however, was a perfect success.

On the same afternoon several pre-war military aeroplanes were flying, one built by Chinese. They were very much dwarfed by the Handley Page.

FRANCE.

The American Aero Club.

Mr. Augustus Post, Secretary of the American Aero Club, and delegate to the recent Aeronautical Congress of Belgium, has arrived in Paris recently from Italy. He stated that his club, besides offering large prizes for cross-Atlantic and Pacific flights, amounting in all to over £15,000, is trying to arrange a flight round the World.

The Paris-Melbourne Flight.

M. Poulet left Bangkok on Dec. 2nd, two hours after the departure of Capt. Ross Smith, and was caught in an equatorial storm. Steering by his compass he managed to reach Rangoon, 350 miles behind his starting point, after a flight of eight hours.

PROXIME ACCESSIT. M. Etienne Poulet, who is the runner-up in the flight from Europe to Australia.

The "Auto" of Dec. 11th stated that he would return to Paris by air, and receive the Medaille Militaire for his exploits during the war and for his present flight. M. Poulet will then begin preparations for a round-the-world flight in the competition organised by the American Aero Club.

A message from Sydney dated Dec. 13th stated that strong representations were being made to the Federal Government to cable £1,000 to him and invite him to visit Australia before returning to France.

Capt. Marchal and America.

Capt. Marchal is about to embark for the United States, where he intends to make arrangements for a cross-Atlantic flight. He has already submitted his scheme to the Under Secretariat of Aviation in the French Government.

GERMANY.

A Flight to Warsaw.

A "Times" correspondent cabled from Berlin on Dec. 10th that a commercial Handley Page aeroplane, carrying five British civilians, landed at the Allgemeine Elektricitats-Gesellschaft's aerodrome at Spandau on that morning. The machine had travelled from London via Cologne. The passengers are staying in Berlin, pending a decision by the German authorities as to whether they shall be allowed to continue their flight to Warsaw. A later account stated that that machine was piloted by a Capt "Hearn," and was to be sold in Warsaw.

The civilian pilots of the machine are Capt E. D. C. Herne and Capt. Macnaught Davis. The Handley Page machine would have been sent by sea, but it was found too big to be carried under the bridges on the railway line from Danzig to Warsaw. Accordingly the two pilots, with two mechanics and a Swiss interpreter, set out by air.

While held up for a week by bad weather at Cologne they obtained permission from the German authorities for themselves to enter Germany, but they could not get a permit for the aeroplane. They continued nevertheless and at Paderborn, in Westphalia, an attempt was made to stop them.

Capt. Herne's account is as follows :—

"I suddenly saw two German machines in full war paint, Iron Crosses and all, making for us. They flew close alongside, the pilots motioning to us with their hands to land. We did not want any explanations except with the proper authorities in Berlin, so we flew on, waving our hand in a friendly way.

"When the Germans saw that we were not coming down, they were furious and flew round us for 20 minutes, crossing so close as almost to graze us with their wing-tips and shaking their fists at us angrily.

"At Spandau the Germans were simply amazed to find th we were a British civilian machine and had never seen our

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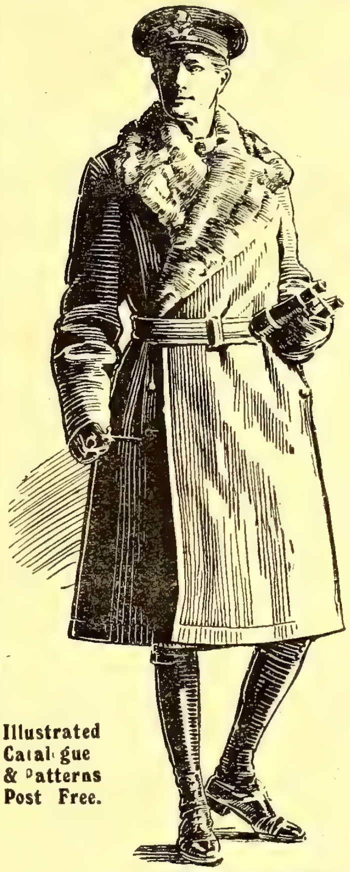

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international markings before, but they treated us very well, gave us hot drinks, and drove us to Berlin."

The German authorities had to refuse to allow the aeroplane to continue to Warsaw on Dec. 14th, as it was impossible to warn the frontier guards in time.

HAVANA.

A company has been formed in Havana, financed by Senor H. S. Mesa, a wealthy Cuban, for the establishment of a passenger air service to Cuba, Miami (Florida), and New York. It was announced in some New York newspapers that six three-passenger and two sixteen-passenger machines are to be used on the service.

ITALY.

The Government Competition.

The Italian correspondent of The Aeroplane writes :—

Details of the long-promised Government Competition for aeroplanes are being divulged. Briefly, the powers that rule are plumping for a small land aeroplane and a very big hydro-aeroplane. Presumably, the S.I.A.I. pluri-motored flying-boat, which is said to be of big dimensions, and two, or possibly three, large craft from down South, of which one hears vaguely, fill the latter part of the programme, not forgetting the Caproni hydro-triplane, with its many engines.

The Paris Aero Show.

What the F.I.A.T. have in store is more likely to be seen at the Paris Show than here. The new star-radial-engine is said to be making its debut there, and two or more of the latest big flying machines, including the Transatlantic type, which will run the risk of getting into the midst of the strike fiend by travelling tortoisewise. Perhaps its power plant will acquire a healthy taste for heavy oil fuel from the French locomotives, which may be all to the good of the breed.

The Tripoli Escadrille.

It is reported that one of the seaplanes belonging to the Tripoli escadrille recently covered the distance of 1,000 kilometres between that place and Bengasi in 7 hr. non-stop with three up. As usual, the weather conditions, as in all health resorts, were unfavourable and quite unusual. But, anyhow, I am told all sorts of good things as to this escadrille's hard battle with obstacles, human and material, which would appeal to any equipment officer who had tried to get things organised.

The Pilots' Trade Union.

Col. Piccio writes that he did not accept the post of President of the Roman Pilots' Trade Union, which, instead, was conferred on Col. Ferrari.—T. S. H.

SOUTH AMERICA.

According to the "Times" of Dec. 13th a regular air service has been inaugurated between Buenos Aires and Montevideo by members of the French Aviation Mission.

SPAIN.

The Necessity for Passports.

The Ministry of the Interior has issued instructions that the pilots and passengers of foreign aircraft landing in Spain are to be asked to produce their passports. If they fail to show these papers they are to be detained pending instructions from the Ministry. There is no difficulty in obtaining passports to Spain, and plots are advsed to comply strictly with the regulations in these matters.

A Madrid—London Flight.

The following account of their flight from Madrid to London in a "Vickers-Vimy Rolls" bombing aeroplane is given by Capt. Cockerill and Capt. Broome :

We left Madrid on the morning of Dec. 4th in thick mist, and, flying above this and clouds, crossed the Guadarama Mountains at 7,000 feet. We flew by a compass course above the clouds for 1½ hours, and then came through and found ourselves at Aranoa. We made Vittoria in 2 hours 40 min. The aerodrome at Vittoria was very wet. The machine got bogged, and it took one day to get out of it.

We left Vittoria for Bordeaux on Dec. 5th, crossed the Pyrenees above the clouds on compass course, and came through the clouds about six miles out to sea off Orio. On arrival at Bordeaux we found the aerodrome under water, so decided to make Paris. On the way we found the light failing, and so landed at Tours 4 hours 40 min. after leaving Vittoria.

On the next day (Dec. 6th) we made Paris in two hours. The weather was very bad, with clouds at 500 ft., and rain and snow the whole way. We left Paris on Dec. 8th in a 40-mile-an-hour gale, ran into several bad storms, and were forced to land at Marquise after 3 hours 50 min. against the gale.

We left for London on the morning of Dec 9th in thick mist and against a head wind. On reaching Chatham the mist was so bad that we could not see ground from 300 ft., so flew on compass and reached Hendon 1¼ hours after leaving Marquise.

SWEDEN.

Lieut.-Col. G. L. P. Henderson, M.C., A.F.C., R.A.F., who has been flying from London to Stockholm, has been delayed considerably by exceptionally bad weather, having arrived in Scandinavia just at the season when the weather is changing over from the settled weather of autumn to the settled cold weather of winter. Between Hamburg and Stockholm he flew for many miles through snow-storms, and was either compelled to lose sight of the ground altogether, or to fly within 100 feet or so of the tree-tops. It speaks well for his 160-h.p. Beardmore engine that despite the appalling weather through which it has passed, it has never given him a moment's trouble.

Colonel Henderson remarks that there are a good many fields in Sweden in which it is possible to land, many of them quite suitable for a D.H.4, and, he adds, if it is impossible to get down safely it probably does not hurt any more in a D.H.4 than in an "Ack-W." to get the top of a pine tree stuck up through the floor! He believes that in summer, with the corn growing, it would be difficult to find a good landing ground, and in some places landing is impossible for stretches of 20 and 30 miles, and he therefore recommends seaplanes for flying in Sweden.

The obvious difficulty in selling British aeroplanes in Sweden is that one can buy two twin-engined German seaplanes for the price of one single-engined British seaplane.

UNITED STATES OF AMERICA.

The following notes are taken from "Automotive Industries" of Oct. 23rd :—

Weather Forecasts.

A daily weather forecast for fliers has been inaugurated by the Weather Bureau of the United States Department of Agriculture. The country has been divided into thirteen zones and the forecasts are sent out for each zone to the various army posts, aerodromes and publications interested. Forecasts are made at 9.30 a.m. and 9.30 p.m., and cover a period of 24 hours. They indicate whether the flying weather will be "poor" or "good," whether there is a prospect of rains or clouds and the strength and direction of the winds. In addition they estimate the strength of the winds at various altitudes.

The Aerial Mail Service.

A rebuilt De Havilland 4 mail aeroplane, fitted with a Liberty engine, made a non-stop flight of 415 miles from Cleveland to Jersey City on Oct. 17th. The distance was covered in 3 hr. 26 min., the rate of speed being 129 m.p.h. This was the longest non-stop flight ever made by a mail aeroplane.

The purpose of the voyage was to determine how much more mileage it was possible to get out of alcohol as compared with petrol. The results obtained were in keeping with the two months' flying on this synthetic fuel between New York and Washington.

An Aircraft Exhibition.

The first aeronautical exposition in 1920 will be held in Chicago during the week of Jan. 8th, and, it is said, will be the first show of its kind ever to be held outside New York. The Manufacturers' Aircraft Association of New York have announced that the exhibits will be of types mostly for the use of private owners.

Dropping Dodgers.

The following paragraphs headed Milwaukee (Wis.), Sept. 27th, are taken from "Automotive Industries" of Oct. 2nd, and left in the American language, as the narrative would only be spoilt by translation :—

"History was made in the Wisconsin dealer trade during the week when Leslie D. Frint, Oldsmobile distributer, made a real flying trip to the factory at Lansing, Mich., using his Curtiss JND4 airplane. It was the first time that a dealer or distributer in this part of the country has essayed to call on the manufacturer in this manner.

"Frint, some time ago, purchased a Curtiss flying machine and organised the L. D. Frint Aeronautical Co., to establish an aerial taxicab line. He leased a large field at North Milwaukee, built a hangar and advertised trips at $10 and upward. The ship was campaigned on the country fair circuit in Wisconsin this fall.

"Frint left at 9.42 o'clock Monday morning and arrived at Lansing at mid-afternoon, making a stop at South Bend, Ind., en route. The pilot was Lieut. H. R. Overly, late of the Army Air Service, who is now acting as Frint's aeronautical manager.

"The ship carried a large supply of red, white and blue dodgers, which were dropped from the sky as the travellers arrived over the Olds Motor Works. The dodgers were in the form of an S. O. S. message, urging the plant to 'whoop 'er up' and supply more passenger cars and trucks 'I am up in the air for your answer,' said Frint, actually and figuratively, in the dodger.

"Before returning to his airport at Milwaukee, Frint intends to make a side trip to Detroit, and also to stop off at Cleveland."

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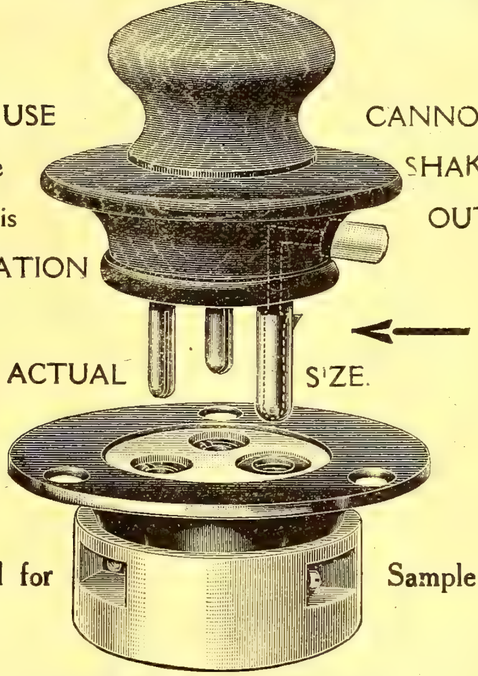

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GREAT BRITAIN.

NAVAL.

Admiralty, Dec. 1st.

R.M.—Capt. G. E. Wildman-Lushington returns to Corps duty from the Seconded List (R.A.F.), and will be borne supy. to estbt. until absorbed, Oct. 23rd.

MILITARY.

War Office, Dec. 9th.

Territorial Force.—Infantry.—4th Bn., Yorks. R.—Sec. Lt. D. I. B. McCullock to be Lt., and to remain secd. R.A.F., Nov. 13th, 1918.

War Office, Dec. 12th.

Regular Forces.—Infantry.—Durh. L.I.—Lt. J. B. Tait, attd. R.A.F., resigns his commn., Sept. 27th (substituted for the notification in "Gazette," Sept. 26th).

Memorandum.—Sec. Lt. J H. Ferguson, attd. R.A.F, retires on ret. pay, Dec. 13th.

Territorial Force.—Infantry.—4th Bn., North'n R.—Sec. Lt. E. Phillips to be Lt., and to remain seconded (R.A.F.), April 25th, 1918.

War Office, Dec. 13th.

Regular Forces.—Special Reserve of Officers.—Infantry.—4th Conn. Rangers.—Lt. A. P. V. Daly relinquishes his commission on appointment to a commission in the R.A.F., Aug. 1st.

AIR FORCE.

The following relinquish their temp. R.A.F commns. on return to Army duty:—Flight Lt. A. P Davidson (Lt., H.L.I.), Nov. 27th; Sqdn Ldr. H. E Rudkin, O.B.E. (Maj., R. Irish Regt.), Dec. 1st.

Capt. (actg. Maj.) H. F Atkinson-Clark, M.V O., O.B.E. (Capt., Scots Gds.), relinquishes his commn. on ceasing to be empld., and is permitted to retain rank of Maj., Aug. 1st.

Maj. H. F. Towler (actg. Lt., R.N.R.) relinquishes his commn. on ceasing to be empld., and is granted rank of Lt.-Col., Oct. 25th (substituted for notification in "Gazette," Nov. 11th).

Transferred to unempld. list, from (S.O.):—Lt. H. F. Walker, M.B.E., Nov. 30th; Capt. G. G. Shepherd, O.B.E., Dec. 1st.

Air Ministry, Dec. 5th.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Dec. 5th. They will retain their seniority in the substantive rank last held by them prior to the grant of the short service commission.

In the case of officers now gazetted Flying Officer or Observer Officer, from Pilot Officer, seniority will date from the date of the "Gazette":—

Sqdn. Ldr.—J. P. C. Sewell, O.B.E. (A.), M. E. A. Wright, A.F.C. (A.P. (T.)).

Flt. Lts.—A. H. S. Baker, O.B.E. (S.O.), J. S. Browne (A.), B. C. Meates (A.), H. I. Hughes (T.), C. Musgrave, A.F.C. (A.), P. W. Snell, A.F.C. (A.).

Flying Officers.—F. P. Adams (A.), C. Ayling (A.), Rev. R. M. Bankes-Jones (A.), C. E. Barraclough (A.), C. O. Bird (A.), S. W. Bird (A.), G. Birkett (A.), H. Bligh (A.), V. A. Boulle (A.), W. J. Brown (A.), F. Carpenter (A.), P. J. Cox (A.), W. J. Daddo-Langlois (A. and S.), A. B. M. Dale (T.), F. G. C. Dickinson (A.), B. A. de Nevers (A.), J. MacG. Fairweather (A.), F. A. Giles (A.), A. V. H. Gompertz (A.), W. I. Hannon (A.), F. H. R. Henwood, D.F.C. (A.), R. J. H. Holland (A.), F. L. Hopps, A.F.C. (A.), W. R. S. Humphreys (T.), J. R. Jaques, M.C. (A.), A. R. Jones (A.), K. F. Jones (A.), R. Lamb (A.), R. Littlejohn (Ad.), E. R. Longhurst (A.), R. F. C. Metcalfe (A.), S. E. Mailer, A.F.C. (A.), L. G. Paget, A.F.C. (A.), L. W. Park (Ad.), R. C. Preston, A.F.C. (A.), W. C. Pruden (A.), G. Robinson, M.C. (A.), J. A. Rudd (A.), W. W. Saunders (A.), J. A. H. Savage (S.O.), C. H. Tancred, M.B.E. (S.O.), C. H. Teagle (A.), T. A. Thornton (A.), F. D. Travers, D.F.C. (A.), S. F. A. Welsh (Ad.), H. J. Young, M.B.E. (Ad.).

Obrs. Officers.—J. C. Bulteel, B. E. Essex, A. P. Ledger, M. J. Wyatt, M.C.

Flying Officers (from Pilot Officers).—E. H. Attwood (A.), P. Bailey (A.), C. H. Billings (A.), E. Bird (A.), A. D. L. Carroll (A.), W. J. Cooke (A. and S.), G. C. W. Dufty (A.), J. B. Duminy (A.), J. Edmunds (A. and S.), C. C. Gissing (T.), V. W. Helps (A. and S.), H S. Hobby, M.C. (A.), E. R. C. Hobson (A.), H. W. Iles (A.), D. M. I. Macarthur (A.), H. N. V. Le V. Noel (A.), W. H. L. Oxland (A.), S. H. Potter (A.), R. C. Pretty (A. and S.), H. C. Price (A.), C. O. Rigden (A.), J. H. Shaw (A.), J. Silvester (A.), M. F. Tomkins (T.), G. M. Trundle (A.), E. A. Turnbull (T.), G. W. Wilson (A.).

Obsr. Officers (from Pilot Officers).—W. A. Armstrong, E. D. Barnes, F. H. Buggé, B. C. S. Byrne, R. T. Carter, G. S. Coggan, B. G. Drake, K. H. Holley, L. W. Kitt, T. L. Lowe.

The notifications appearing in the "London Gazettes" of the dates indicated below, appointing the following officers to short service commissions, are cancelled:—Flt. Lt. N. R. Cook, D.S.C. (A. and S.); Flying Officer G. J. Fowler, A.F.C. (A.), Oct. 24th; D. S. C. Macaskie (T.), Nov. 11th.

The notification in the "Gazette" of Nov. 28th relative to Flt. Lt. E. F. Turner (T.) is cancelled, and that in the "Gazette" of Oct. 24th, appointing this officer to a short service commission, stands.

R.A.F.—The heading of the list of promotions which appeared in the "London Gazette" dated Nov. 28th should read "permanent and short service commissions, and re-seconded officers," instead of "permanent commissions."

Flying Officer W. B. Thomson (A.) is granted a permanent commn. in the rank stated, Aug. 1st.

The notification in the "Gazette" of Aug. 1st, appointing the following officers to permanent commns., is cancelled:—Capt. E. E. N. Burney, M.C. (A.), Capt. L. M. Lilley, O.B.E. (T.), Lt. M. Minter (A.), Lt. G. R. Barry (T.), Lt. D. N. Thompson, M.C. (S.O.).

The notification in the "Gazette" dated Oct. 28th, appointing the following officers to permanent commns, is cancelled:—Flt. Lt. M. R. N. Jennings, M.C., A.F.C. (A.), Flt. Lt. A. B. Shearer (A.), Flying Officer C. O. B. Beale, D.S.O. (A.).

The initials of Lt. R. H. F. S. de V. Somerset are as now described, and not as stated in "Gazettes" of Aug. 1st and Sept. 16th.

The following temp. appts. are made at the Air Ministry:—Staff Officers, 3rd Class (T.).—Flt. Lt. L. D. McKean, Nov. 13th (Q.)—Flying Officer H. J. Birtels, Nov. 24th.

The following temp. appts. are made:—Group Capt. H. C. T. Dowding, C.M.G., is graded for purposes of pay and allces. as an Area Comr., whilst officiating in comd. of an area, from Sept. 1st to Oct. 17th.

Staff Officer, 1st Class.—(Air).—Wing Comdr. C. W. Wilson, M.C., Oct. 16th.

Staff Officers, 2nd Class.—(P).—Sqdn. Ldr. H. A. Michell, O.B.E., Oct. 16th, from (S.O.), 1st Class. (Air).—Sqdn. Ldr. R. L. G. Marix, D.S.O., Nov. 12th.

Flying Branch.—Wing Comdr. W. F. MacNeece, D.S.O., D.F.C., to be Wing Comdr. (A.), from (S.O.), Dec. 4th.

Sec. Lt. E. Phillips to be Lt., Nov. 10th, 1918.

The following relinquish the temp. R.A.F. commns. on return to Army duty:—Pilot Officer (Hon. Flying Officer) A. J. Cyr (Lt., Can. Forestry Corps), May 9th; Flt. Lt. (Hon. Sqdn. Ldr.) G. Disney (Maj., Essex R.), Oct. 27th; Flt. Lt. C. C. Clark (Lt., R.F.A.), Nov. 10th; Flying Officer J. K. Smith (Lt., Lanc. Fus.), Nov. 12th; Flying Officer V. Bayley (Lt., L'pool R.), Nov. 14th; Flying Officer W. F. Nickolay (Lt., E. Yorks. R.), Nov. 17th; Flying Officer L. Gellatly (Lt., Gord. Highrs.), Nov. 20th; Wing Comdr. G. E. Todd, O.B.E. (Maj. (Bt. Lt.-Col.), Welsh R.), Nov. 27th.

Sec. Lt. J. F. M. Phillips relinquishes his commn. on ceasing to be empld., Oct. 25th.

Sec. Lt. H. A. Ball, M.M. (Lt., R.H. and R.F.A.), relinquishes his temp. R.A.F. commn. on retirement from the Army, Nov. 23rd.

Transferred to the unempld. list:—Sec. Lt. C. C. Brooks, Lt. (actg. Capt.) S. Stanger, M.C., D.F.C., Sec. Lt. C. E. Stewart, Sec. Lt. A. Tencer, Sec. Lt. A. H. Wilkinson, Feb. 1st; Lt. A. B. Hopper, March 15th (substituted for notification in "Gazette" of Sept. 16th); Sec. Lt. H. E. Fisher, April 19th; Sec. Lt. J. V. Price, April 22nd; Lt. H. B. Lilley, May 1st; Sec. Lt. L. P. Worthington, June 3rd; Ses. Lt. N. Lotter, June 14th; Lt. R. N. L. Munro, July 5th; Lt. A. Dickson, July 9th; Lt. H. M. Cartwright, July 10th; Sec. Lt. F. G. Wright, July 12th; Sec. Lt. W. Dowding, July 29th (substituted for notification in "Gazette" of Aug. 5th); Lt. A J. Stopford, Aug. 11th (substituted for notification in "Gazette" of July 29th); Sec. Lt. D. J. Dillabough, Sec. Lt. T. Hartford, Aug. 22nd; Sec. Lt. J. F. Starkey, Aug. 29th; Sec. Lt. V. B.-P. MacCallum, Sept. 10th; Lt. W. H. Oliver, Sept. 12th (substituted for notification in "Gazette" of Nov. 7th, wherein this officer was shown as "Capt."); Sec. Lt. (Hon. Lt.) D. A. McDonald, Sec. Lt. A. G. Power, A.F.C., Sec. Lt. Le Roy Springstead, Sec. Lt. G. H. Swan, Sept. 26th; Lt. C. C. Caldwell, Sec. Lt. W. A. Grant, Sec. Lt. A. H. McDonal, Lt. H. W. Price, Sec. Lt. A. H. Smith, Sec. Lt. G. R. Spradbrow, Sec. Lt. A. Strachan, Sec. Lt. H. C. Sweetman, Sept. 28th; Lt. E. F. H. Davis, Lt. G. M. McWilliams, Sec. Lt. E. G. Shafer, Sec. Lt. H. J. Smith, Capt. G. L. E. Stevens, Sec. Lt. D. Stevenson, Lt. H. E. Stewart, Lt. G. Stocks, Lt. E. C. R. Stoneman, D.F.C., Sec. Lt. R. Williams, Lt. W. Windrum, Sept. 29th; Sec. Lt. J. W. Chadwick, Lt. P. M. Tudhope, D.F.C., Oct. 6th; Capt. W. Lambert, Sec. Lt. F. C. McConnell, Oct. 7th; Capt. Lord Alington, Oct. 12th (substituted for notification in "Gazette" of Nov. 14th); Sec. Lt. W. E. Lewis, Oct. 17th; Sec. Lt. H. Edge, Oct. 31st; Lt. W. P. James, Nov. 1st; Sec. Lt. A. Turner, Nov. 7th; Sec. Lt. A. R. L. Lango, Sec. Lt. R. A. Wade, Nov. 12th; Lt. H. G. Lomberg, Sec. Lt. J. W. McArthur, Sec. Lt. P. A. Savoie, Lt. J. M. Smith, Lt. A. B. Taylor, Capt. W. B. Tisdall, Sec. Lt. W. L. Woodhouse, Lt. J. A. Wright, Nov. 13th; Capt. H. J. Roach, A.F.C., Capt. S. D. Scott, Nov. 15th; Sec. Lt. (Hon. Lt.) D. M. Davies, Lt. H. E. Hyde, Lt. R. T. Whitney, Nov. 16th; Sec. Lt. E. J. Storey, Lt. J. T. Thursfield, Nov. 17th; Sec. Lt. E. C. W. Bray, Sec. Lt. (Hon. Lt.) H. S. Hobby, M.C. (Yorks R.), Sec. Lt. C. C. Thurrel, Sec. Lt. D. F. Turpin, Nov. 18th; Lt. L. V. Dell, Nov. 19th; Capt. F. Rose, A.F.C., Sec. Lt. J. D. Swallow, Nov. 20th; Lt. L. H. Gibbon, Lt W. A. L. Spencer, Nov. 21st; Lt. C. W. Bragg, Sec. Lt. W. A. Greig, Lt. S. Jones, Sec. Lt. H. Runciman, Sec. Lt. (Hon. Lt.) H. Taylor, M.C., Nov. 22nd; Sec. Lt. H. Ellison, Nov. 26th; Capt. K. Capel, Nov. 30th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank:—F. K. Ratcliffe (contracted on active service), Nov. 27th; P. W. Anderson (caused by wounds), A. D. Robertson (contracted on active service), Nov. 28th.

Sec. Lt. E. M. Nicholas relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, May 8th.

Sec. Lt. S. Le Roy Switzer is antedated in his appt. as Sec. Lt. (A. and S.), May, 25th, 1918.

The notification in "Gazette" Sept. 5th concerning Lt. F. G. M. Sparks is cancelled (notification in "Gazette" June 6th to stand).

The notification in "Gazette" Oct. 17th concerning Lt. H. W. Auerbach is cancelled (notification in "Gazette" Oct. 28th to stand).

The notification in "Gazette" Nov. 18th concerning Lt. J. N. Catling is cancelled.

The notification in "Gazette" Nov. 18th concerning Sec. Lt. (Hon. Lt.) A. Cox (Lt., R. Welsh Fus.) is cancelled.

Administrative Branch.—Sec. Lt. J. A. McGilley to be Lt., March 1st.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flying Officer Sir H. W. A. Ripley, Bt. (Lt., 1st Dgns.), Feb. 17th (substituted for notification in "Gazette," Feb. 7th); Flying Officer C. C. Statt (Lt., Oxf. and Bucks. L.I.), April 15th; Sqdn. Ldr. K. L. Buist (Maj., H.L.I.), Flying Officer J. E. G. O'Byrne (Lt., R. Muns. Fus.), Nov. 19th.

Lt. T. J. Hudson (Sec. Lt., Ex. Reg. Empld. List) relinquishes his temp. R.A.F. commn. on retirement from the Army, Dec. 6th.

Transferred to the unempld. list:—Sec. Lt. E. A. Parnell, Feb. 4th; Sec. Lt. S. J. Mitchell, March 12th; Lt. F. R. Hatch, March 31st (substituted for notification in "Gazette," June 24th); Sec. Lt. C. W. McKissock, May 1st; Lt. K. V. Stratton, May 28th; Maj. S. E. Parker, M.B.E., A.F.C., Aug. 1st; Lt. E. R. Wilkinson, Sept. 12th; Sec. Lt. B. Shaw, Oct. 8th; Capt. H. D. Stanton, Oct. 9th; Lt. R. B. Guy, Lt. J. McGilley (substituted for notification in "Gazette," Oct. 28th, wherein this officer was shown as Sec. Lt.), Oct. 13th; Sec. Lt. W. P. Taltavall, Nov. 2nd; Sec. Lt. J. P. Strydom, Nov. 7th; Capt. (actg. Maj.) W. G. Scott, Nov. 10th; Sec. Lt. J. W. Clarke, Nov. 13th; Sec. Lt. F. F. Anslow, Sec. Lt. (Hon. Lt.) E. T. Fielding, Lt. E. C. Rylands, Nov. 15th; Sec. Lt. N. F. Cooke, Nov. 17th; Lt. (Hon. Capt.) J. W. Harling, Nov. 18th; Capt. J. H. Hannay, Sec. Lt. J. S. Shipway, Lt. (actg. Maj.) R. Tait, Capt. A. Toomey; Sec. Lt. (Hon. Lt.) G. Watts, Nov. 21st; Sec. Lt. M. W. Taplin, Nov. 24th; Sec. Lt. J. S. McLeod, Nov. 26th.

Technical Branch.—Pilot Officer F. Simpson to be Flying Officer, without the pay and allowances of that rank, Oct. 1st (substituted for notification in the "Gazette" of July 29th).

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flying Officer E. Gayton (Lt., R.F.A.), Nov. 15th; Pilot Officer (Hon. Flying Officer) W. W. Smith, M.C. (Lt., actg. Capt., Shrops. L.I.), Nov. 18th; Flying Officer (Lt., N. Staffs. R.) P. S. Laughton, Nov. 20th.

Transferred to the unempld. list:—Sec. Lt. A. T. Watts, April 15th; Lt. W. B. Wood, Aug. 18th; Lt. A. W. Allan, Sept. 16th (substituted for notification in the "Gazette" of Nov. 18th, wherein this officer's rank was shown as Sec. Lt. (Hon. Lt.)); Sec. Lt. H. E. Edwards, Sept. 26th; Lt. A. V. Sutton, Sec. Lt. F. P. Ward, Sept. 28th; Sec. Lt. A. S. Roberts, Sept. 29th; Lt. (Hon. Capt.) D. A.

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English, Oct. 10th; Sec. Lt. (Hon. Lt.) J. R. Rayneau, Nov. 1st; Lt. G. H. Johnson, Nov. 8th; Sec. Lt. J. L. H. Thomson, Nov. 11th; Capt. H. I. Hughes, Nov. 12th; Sec. Lt. G. H. Taylor, Nov. 13th; Sec. Lt. (Hon. Capt.) W. J. Collins, Capt. W. A. B. Laing, Sec. Lt. G. T. Laverty, Nov. 15th; Lt. W. T. Davis, Nov. 17th; Capt. J. H. Sayner, Nov. 20th; Sec. Lt. J. C. Corbin, Sec. Lt. C. C. Cruttenden, Sec. Lt. F. G. Eckford, M.B.E., Lt. T. Foster, Capt. C. W. M. Ludgate, Nov. 21st; Capt. A. R. Wood, Nov. 27th.

The notification in the "Gazette" of July 18th concerning Maj. G. Dixon-Spain, M.C., is cancelled. (Notification in "Gazette" of June 27th to stand.)

The notification in the "Gazette" of Oct. 28th concerning Lt. J. Butterfield, wherein this officer was shown on the unempld. list, is cancelled. (Notification in "Gazette" of Nov. 7th to stand.)

Medical Branch.—Capt. B. H. Swift is transferred to the unempld. list, Oct. 23rd.

Dental Branch.—Capt. H. L. Thorn is transferred to the unempld. list, Nov. 19th.

W.R.A.F.—Deputy Administrator (actg. Administrator) Mrs. M. Gerard reverts temporarily to the rank of Asst. Administrator on ceasing to be empld. as Administrator, Oct. 1st, and is empld. in her substantive rank of Deputy Administrator, Oct. 20th.

The date of relinquishment of appt. of Deputy Administrator E. V. M. Anderson is Oct. 6th, and not as stated in "Gazette" of Nov. 7th.

The date of relinquishment of appt. of Deputy Administrator M. C. Ralston is Nov. 8th, and not as stated in "Gazette" of Sept. 19th.

To be Actg. Asst. Comdt., Class I:—Asst. Comdt. II K. L. Curlett, O.B.E., Nov. 4th.

To be Actg. Deputy Administrator:—Asst. Administrator I. O. S. Goddard, Dec. 4th.

The following officer relinquishes her appt. on the grounds of ill-health:—Asst. Administrator E. B. Imeson, Nov. 8th.

The following officers relinquish their appts. at their own request: Deputy Administrators.—Mrs. G. Pertwee, M.B.E., Mrs. F. Day, M.B.E., Sept. 18th; Mrs. A. Hughes-Gibb (actg. Adm., D.A.C.), Nov. 5th.

Asst. Administrators.—M. D. Newton, Aug. 5th; L. M. Gore-Hart, Aug. 30th.

The following officers relinquish their appts. on completion of service:—Comdt. Dame H. C. I. Gwynne-Vaughan, D.B.E., Dec. 5th.

Administrators.—Mrs. B. D. Beckett (D.A.C.), Oct. 31st; M. N. Thornton, Nov. 3rd; O. Earlam (actg. Asst. Comdt. II), Nov. 22nd; Mrs. M. A. Atkin (D.A.C.), Nov. 23rd.

Deputy Administrators.—F. M. Girdler (actg. Adm.), Nov. 3rd; M. F. E. Scott, Nov. 4th; Mrs. C. Balthazar-Gething, M.B.E., E. R. Sinclair, Mrs. N. E. Moore-Anderson, Nov. 8th; J. Alexander, Nov. 14th; D. E. B. Livesay, Nov. 15th; I. A. Coombs, Nov. 20th; A. G. Jones, Nov. 21st; V. Dening, Nov. 25th; E. I. David (actg. Adm.), Dec. 1st.

Assistant Administrators.—A. A. Screech, Oct. 10th; E. A. Burbidge (actg. Dep. Adm.), Oct. 11th; E. N. Forshaw, M. H. Silcock (actg. Dep. Adm.), Oct. 15th; M. C. Whidborne (actg. Dep. Adm.), E. Curry, Nov. 1st; G. Bell-Cox (actg. Dep. Adm.), O. P. Downes, N. Maunsell, Nov. 4th; E. L. Smith (actg. Dep. Adm.), Nov. 7th; M. S. Cole-Hamilton (actg. Adm.), E. R. Gill, A. M. Davis, M. E. Hamilton (actg. Dep. Adm.), Mrs. M. M. Pope, Nov. 8th; Mrs. M. M. Gattie, R. Newling, Nov. 10th; L. A. Goodwin (actg. Dep. Adm.), Nov. 12th; I. Carss, Nov. 14th; K. J. Wright (actg. Dep. Adm.), M. A. Scholefield (actg. Adm., D.A.C.), Nov. 15th; F. H. Spinney (actg. Adm.), Nov. 18th; J. St. C. Balls, Nov. 19th; E. M. Williams (actg. Dep. Adm.), Nov. 21st; Mrs. K. L. Churchill, K. G. Mitchell (actg. Dep. Adm.), Nov. 22nd; D. Hodgson (actg. Dep. Adm.), Nov. 25th; N. Campbell (actg. Dep. Adm.), Dec. 5th.

Memoranda.—Lt. W. F. Kisbey is granted the hon. rank of Capt., Feb. 19th.

Temp. Hon. Lt. A. R. Densley relinquishes his commn. on ceasing to be empld., May 31st.

Capt. L. M. P. Sulivan, O.B.E., is transfd. to the unempld. list, from (S.O.), Nov. 23rd.

The notification in the "Gazette" of Aug. 8th concerning Capt. H. F. Atkinson-Clarke, M.V.O., O.B.E. (Scots Guards), is cancelled.

The notification in the "Gazette" of July 8th concerning 27168 Cadet J. Evans is cancelled.

Air Ministry, Dec. 9th.

R.A.F.—Flying Officer G. Archer (O.) is granted a permanent commn. in the rank stated, with effect from Aug. 1st.

The notification in the "Gazette" of Aug. 22nd appointing Capt. G. L. Godden, O.B.E. (T.), to a permanent commn. is cancelled.

The notification in the "Gazette" of Oct. 28th appointing Flying Officer C. T. Black (A.) to a permanent commn. is cancelled.

The notification in the "Gazette" of Dec. 2nd appointing Flying Officer A. L. M. Van der Byl (A.) to a permanent commn. is cancelled.

The following temp. appts. are made:—Staff Officers, 2nd Class.—(P.)—Sqdn. Ldr R. J. F. Barton, O.B.E., Dec. 4th; (Q.)—Sqdn. Ldr. F. A. J. B. Wiseman, O.B.E., Oct. 18th, from (S.O.), 1st Class.

Staff Officers, 3rd Class.—(P.)—Flight Lt. L. A. K. Butt, Dec. 4th; (T.)—Flight Lt. W. J. B. Curtis, O.B.E., Oct. 18th, from (S.O.), 2nd Class.

Flying Branch.—Sqdn. Ldr. D. L. Allen, A.F.C., to be Sqdn. Ldr. (A.), from (S.O.), Oct. 18th.

The following Capts. are graded for purposes of pay and allowances as Majs. whilst empld. as Majs. (A'ship), from May 1st to July 31st:—R. A. Cochrane, A.F.C., G. M. Thomas, D.F.C.

Flight Lt. D. G. Donald, A.F.C., to be actg. Sqdn. Ldr. whilst empld. as Sqdn. Ldr. (A.), without the pay and allowances of that rank, Aug. 1st.

Flight Lt. F. N. Halsted, D.S.C., D.F.C., to be Flight Lt. (A. and S.), from (S.O.), Nov. 24th.

The following Lts. are graded for pay and allowances as Capts. whilst empld. as Capts.:—R. B. Gibb (A'ship) to Sept. 8th; L. W. Baker, D.F.C. (K.B.), to June 3rd, May 1st; Lt. S. G. Barlow to be Lt. (O.), from (Ad.), July 22nd

Flying Officer (actg. Flight Lt.) C. E. Maitland, D.F.C., relinquishes the actg. rank of Flight Lt. on ceasing to be empld. as Flight Lt. (A.), Sept. 21st.

Sec. Lts. to be Lts.:—(Hon. Lt.) J. Duncanson, June 1st, 1918 (since relinquished his commn.) (substituted for notification in the "Gazette" of Oct. 14th); (Hon. Capt.) W. E. Dowling, Aug. 11th, 1918; F. L. W. Dowling, May 16th; K. S. Eagles, June 7th; H. Nattrass, I. C. Slater, June 20th.

Pilot Officers to be Flying Officers:—J. E. Phelps, Aug. 7th; J. H. Mehigan, Oct. 1st.

P.F.O. H. W. Symmes (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (A.), Aug. 1st, 1918.

787002 Cadet H. L. Edwards is granted a temp. commn. as Sec. Lt. (O.), July 6th, 1918 (substituted for the notification in the "Gazette," July 16th, 1918, wherein this cadet was described as "Harold Edwards").

Sqdn. Ldr. F. E. Sandford, A.F.C., is placed on the half-pay list, Dec. 10th.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Lt. G. F. Elliott (Lt., Canadian A.S.C.), March 25th; Lt. C. A. Hore, M.C. (Lt., N. Staffs. R.), June 26th; Flight Lt. K. H. Riversdale-Elliott (Lt., Scottish Rifs.), Nov. 9th; Flying Officer R. J. E. P. Goode (Lt., R. Dublin Fus.), Nov. 12th; Flying Officer C. V. A. Bucknall (Lt., Dragoons), Nov. 18th; Flying Officer R. H. F. De V. S. Somerset, D.S.O. (Lt., Coldstream Guards), Flying Officer (actg. Flight Lt.) A. D. K. Perkins (Lt., R. Irish Fus.), Nov. 20th; Pilot Officer (Hon. Flying Officer) C. B. Crawford (Lt., Oxford and Bucks. L.I.), Nov. 21st; Flight Lt. S. P. Simpson (Lt., Bedford and Hertford R.), Nov. 24th; Pilot Officer (Hon. Flying Officer) H. J. Vickers (Lt., Indian Army Res.), Dec. 3rd; Flight Lt. S. B. Horn, M.C. (Capt., Dragoon Gds.), Dec. 4th.

Transferred to unempld. list:—Sec. Lt. D. W. Bell, Jan. 6th; Sec. Lt. E. H. Elliot, Sec. Lt. W. K. Lees, Sec. Lt. E. R. S. Nurse, Feb. 1st; Sec. Lt. (Hon. Lt.) J. E. T. Sutcliffe, March 13th; Lt. H. J. Knudson, April 7th; Lt. M. V. Kelly, April 19th; Sec. Lt. N. L. Neff, May 21st (substituted for notification in "Gazette," May 20th); Sec. Lt. I. W. Hoeffier, May 23rd; Sec. Lt. C. B. A. C. Chase, June 12th; Sec. Lt J. D. S. MacCallum, June 14th (substituted for notification in "Gazette," June 6th); Lt. G. H. Alleby, Sec. Lt. G. A. Beatty, Lt. E. B. Denison, Sec. Lt. C. W. Kerr, July 12th; Sec. Lt. E. H. J. Davidson, July 16th; Sec. Lt. J. Hogg, July 29th; Sec. Lt. L. C. S. Delapina, Aug. 2nd; Sec. Lt. W. J. McIntyre, Aug. 5th; Sec. Lt. T. B. Davie, Aug. 7th; Sec. Lt. F. A. Mathews, Aug. 13th; Capt. F. S. McGill, Aug. 14th (substituted for notification in "Gazette," Nov. 28th); Lt. R. U. Hoodinott, Lt. G. C. Hyde, Aug. 20th; Sec. Lt. H. C. Dean, Sec. Lt. G. Goad, Aug. 22nd; Sec. Lt. H. Milward, Aug. 28th; Lt. C. E. J. Barbour, Aug. 29th; Sec. Lt. H. T. Ayliff, Lt. I. C. Dick, Sept. 9th; Lt. B. R. Digby, Sec. Lt. T. Dixon, Sept. 10th; Lt. H. J. L. Kirkpatrick, Sept. 13th; Lt. S. S. Stone, Sept. 20th; Lt. J. W. Kembery, Sept. 23rd; Lt. J. W. Pearson, D.F.C., Sept. 25th; Lt. H. A. Armstrong, Sec. Lt. M. Baker, Sec. Lt. C. F. Baumhofer, Sec. Lt. A. W. L. Beauchamp, Sec. Lt. C. R. Benedict, Sec. Lt. H. Bennett, Sec. Lt. H. M. Best, Sec. Lt. R. Davis, Sec. Lt. W. D. Durran, Sec. Lt. P. A. Kingsland, Sec. Lt. R. H. McKee, Lt. S. Wyborn, Sept. 26th; Sec. Lt. C. F. Barton, Lt. F. E. Beauchamp, Lt. P. R. Beare, Sec. Lt. E. C. Bigelow, Lt. J. R. Black, Lt. T. G. Blakely, Lt. H. H. Cooper, Lt. W. C. Daniel, Sec. Lt. P. H. Desarmeau, Sec. Lt. E. R. Dixon, Sec. Lt. G. R Dranfield, Lt. A. S. Dunn, Sec. Lt. G. E. Dunn, Sec. Lt. W. H Henrion, Sec. Lt. W. A. Henry, Lt. I. W. Hunter, Sec. Lt. G. C. Hyatt, Lt. F. W. Kemp, Sec. Lt. G. H. P. Knowler, Sec. Lt. D. B. McColl, Sec. Lt. R. S. McConnell, Sec. Lt. F. O. McDonald, Sec. Lt. C. K. McDougall, Sec. Lt. W. F. MacDougall, Lt. E. D. MacFarlane, Lt. T. C. McKechnie, Lt. G. P. McNaughton, Sec. Lt. A. P. Malone, Sec. Lt. A. S. Mathews, Sec. Lt. C. G. Mathias, Sec. Lt. J. Morren, Sept. 28th; Sec. Lt. W. R. Allison, Lt. A. Bentley, Sec. Lt. J. P Bernigaud, Sec. Lt. C. E. Binet, Sec. Lt. W. W. Coates, Sec. Lt. N. W. Davidson, Sec. Lt. D. W. Davies, Sec. Lt. J. M. Dickinson, Sec. Lt. W. L. Dougan, Sec. Lt. A. B. Dunn, Lt. R. S. Durno, M.C., Lt. L. A. Hawkins, Sec. Lt. M. J. Hennessey, Sec. Lt. M. B. Henselwood, Sec. Lt. A. G. Humphrey, Sec. Lt. R. G. H. Hurton, Sec. Lt. J. F. Hyde, Sec. Lt. E. A. Kenny, Sec. Lt. F. B McElrea, Sec. Lt. T. E. McFeely, Lt. G. McIntyre, Sec. Lt. A. D. McLean, Lt. A. G. Makings, Sec. Lt. A. S. Maltby, Sec. Lt. F. C. Marwood, Lt. J. T. Menzies, Lt. A. E. Mewett, Sec. Lt. R. W. Moss, Sept. 29th; Lt. R. Douglas, A.F.C., Sec. Lt. J. B. Downing, Oct. 6th; Lt. S. E. Wise, Oct. 7th (substituted for notification in "Gazette" of Oct. 24th); Lt. H. F. Davidson, Lt. J. D. Mail, A.F.C., Oct. 9th; Lt. J. C. Green, D.F.C., Oct. 10th; Lt. M. A. Benjamin, M.C., Sec. Lt. W. T. S. Lewis, Oct. 12th; Lt. A. S. Barnes, Oct. 13th; Lt. C. W. Seymour-Hall, Oct. 17th; Sec. Lt. I. Duval, Lt. J. P. Lloyde (substituted for notification in "Gazette" of April 1st), Oct. 29th; Lt. A. T. S. L. De Lacrox, Oct. 31st; Sec. Lt. R. R. Beebe, Lt. D. C. Henderson, Nov. 2nd; Lt. K. R. Thomas, Nov. 3rd; Lt. J. O. Holliday, Nov. 4th; Sec. Lt. A. K. Doull, Nov. 6th; Sec. Lt. L. S. Barlow, Nov. 10th; Lt. W. H. L'Estrange Graham, Nov. 12th; Lt. E. Dixon, Lt. R. E. Dodds, D.F.C., Capt. J. W. Hobbs, Lt. S. R. Mantle, Sec. Lt. J. A. Peterson, Sec. Lt. H. Wensley, Nov. 13th; Lt. F. W. Clark, A.F.C., Nov. 14th; Sec. Lt. G. H. Cavill, Sec. Lt. W. T. Doherty, Nov. 15th; Lt. A. L. Bartlett, Lt. T. R. Dixon, Lt. F. A. Hobro, Nov. 17th; Sec. Lt. S. F. Bett, Sec Lt. H. C. McKinley, Nov. 18th; Lt. R. P. Bufton, Sec. Lt. D. Martin, Nov. 19th; Lt. C. W. Moorhouse, Sec. Lt. L. W. D. Peacock, Nov. 20th; Lt. A. Brock, Sec. Lt. G. A. Dover, Nov. 21st; Sec. Lt. S. C. H. Biddle, Sec Lt. C. E. Howley, Sec. Lt. G. Martyn, Nov. 22nd; Sec. Lt. R. W. Cawston, Nov. 23rd; Lt. H. C. Gooch, Nov. 25th; Lt. S. Smith, Nov. 27th; Sec. Lt. H. E. Harden, Lt. W. J. Porter, Nov. 28th; Lt. H. Riches, Nov. 29th; Lt. D. C. Barrington, Nov. 30th; Lt. C. A. Morris, Dec. 2nd.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. N. Catling (contracted on active service), Oct. 20th; F. O. Rooks (contracted on active service), Nov. 6th; R. K. Mackenzie, Nov. 29th (substituted for notification in the "Gazette," Sept. 6th, 1918); W. E. B. Oakley (contracted on active service), Dec. 2nd.

Sec. Lt. H. C. Belore relinquishes his commn., being physically unsuited for the duties of pilot or observer, Oct. 23rd, 1918 (substituted for notification in the "Gazette" of July 26th, 1918).

The following Sec. Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—W. C. Taylor, Oct. 17th; H. B. Mills, Nov. 13th.

The notification in the "Gazette" of Sept. 5th concerning Sec. Lt. F. R. James is cancelled (notification in the "Gazette" of May 2nd to stand).

The notification in the "Gazette" of Oct. 14th concerning Maj. A. K. Robertson is cancelled.

The notifications in the "Gazette" of Nov. 7th concerning the following officers are cancelled:—Lt. W. S. Campbell (notification in "Gazette" of Oct. 24th to stand); Sec. Lt. (Hon. Lt.) E. Lawson (notification in "Gazette" of Nov. 25th to stand); Sec. Lt. W. C. Taylor.

Administrative Branch.—Flight Lts. to be Flight Lts., from (S.O.): H. W. M. Paul, O.B.E., M.C., Oct. 13th (substituted for notification in the "Gazette" of Nov. 18th); G. C. Anne, O.B.E., Oct. 18th.

Sec. Lt. (Hon. Lt.) E. T. Fielding to be Sec. Lt. (Hon. Lt.), from (T.), from May 1st to Sept. 17th, and is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., from May 1st to Sept. 17th.

Lt. C. M. McGorrery to be Lt., from (O.), Dec. 18th, 1918 (substituted for notification in the "Gazette" of March 4th).

Flying Officers to be Flying Officers, from (S.O.), Oct. 18th:—C. S. Fulton, W. Myers, M.C., D.C.M., (Hon. Flight Lt.) H. Pallett, and to be Hon. Flight Lt., A. G. Stradling, R. W. Ward, B. H. Godfrey, Nov. 12th; Flying Officer E. G. Williams to be Flying Officer, from (A.), Oct. 27th.

Sec. Lts. to be Lts.:—T. Gill, Oct. 22nd, 1918 (substituted for notification in "Gazette" of July 29th); A. L. Kidd, May 4th; W. E. G. Heanley, M.B.E., July 10th.

Sec. Lt. (Hon. Lt.) T. Mumford to be actg. Lt. whilst empld. as Lt., Aug. 8th, 1918 (substituted for notification in "Gazette" of Oct. 29th).

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Sec. Lt. S. A. Hipple (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., March 1st.

Capt. (Hon. Maj.) T. M. Ross (Qrmr. and Maj., Dragoons) relinquishes his commn. on ceasing to be empld., Nov. 19th.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Lt. C. E. Bright (Lt. (actg. Capt.), E. Lancs. R.), Feb. 8th; Flight Lt. K. B. Harbord (Capt., R.F.A.), Nov. 23rd.

Transferred to the unempld. list:—Lt. F. J. E. Brake (R.G.A., S.R.), Feb. 1st (substituted for notification in "Gazette" of Nov. 18th, wherein this officer's rank was shown as Sec. Lt.); Capt. A. W. Barrington-Foote, July 11th; Lt. D. F. Hurr, M.C., July 18th; Sec. Lt. G. A. McGillivray, Aug. 22nd; Sec. Lt. O. J. Dean, Aug. 23rd; Sec. Lt. T. D. Drury, Aug. 25th; Sec. Lt. B. J. Fearn, Aug. 31st; Lt. C. L. De Beer, Sept. 10th; Lt. G. A. F. Hudson, Sept. 11th; Lt. S. De Freitas, Sept. 26th; Sec. Lt. W. E. Blackett, Capt. W. R. C. Da Costa, Sept 29th; Lt. H. D. Duncan, Oct. 11th; Sec. Lt. J. Birtwistle, Oct. 12th; Lt. S. J. Dodson, Oct. 20th; Sec. Lt. A. H. Betteridge, Oct. 23rd; Sec. Lt. R. P. Briscoe, Nov. 9th; Lt. (actg. Maj.) F. T. Chapman, Sec. Lt. E. U. Poyser, Nov. 11th; Lt. A. G. W. Grantham, Nov. 15th; Sec. Lt. H. G. Brodie, Lt. J B. V. Clements, D.F.C., Nov. 17th; Lt. S. A. E. Cowell, Sec. Lt. J. P. Nolan, Nov. 21st; Sec. Lt. E. J. K. Boden, Nov. 22nd; Sec. Lt. G. W. C. Dawson, Nov. 28th; Capt. J. W. J. Ashton, Nov. 29th.

Lt. C. S. Bignell relinquishes his commn. on account of ill-health (caused by wounds), and is granted the rank of Capt., Dec. 2nd.

Sec. Lt. A. F. P. James relinquishes his commn. on account of ill-health, and is permitted to retain has rank, Dec. 1st.

The notification in "Gazette" of Nov. 7th concerning Capt. E. P. L. Baker is cancelled.

Technical Branch.—Wing Comdr. (actg. Group Capt.) A. V. Bettington, C.M.G., relinquishes actg. rank of Group Capt. on ceasing to be empld. as Group Capt., Nov. 17th.

Sqdn. Ldr. F H. Unwin, O.B.E., to be Sqdn. Ldr., Grade (B), from (S.O.), Oct. 18th.

The following Capts. are graded for purposes of pay and allowances as Majs. whilst empld. as Majs., Grade (A):—A. M. Low, May 1st; H L. Rutty, from May 1st to July 31st.

Sec. Lt. R. G. Meech is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A), from May 1st to Aug. 28th.

Sec. Lt. C. W. Bentley to be Lt., Grade (A), May 16th (substituted for notification in "Gazette" of July 29th).

Sec. Lts. to be Lts.:—P. A. Edmonds, R. H. B. Tomlinson, May 16th.

Sec. Lts. to be actg. Lts. whilst empld. as Lts., Grade (A):—R. J. Shanks, from April 1st, 1918, to Aug. 31st, 1918; (Hon. Lt.) P. A. Albrecht, June 22nd, 1918, to Feb. 27th.

Sec. Lt. J. Parsons is graded for purposes of pay and allowances as Lt. whilst empld. as Lt., Grade (A), from Feb. 15th to July 21st.

Lt. (Hon. Capt.) W. C. Green, M.C., to be Lt., Grade (B), from (Ad.), July 1st (substituted for notifications in "Gazettes" of July 29th and Sept. 12th).

Sec. Lt. F. Denham to be actg. Lt. whilst empld. as Lt., Grade (B), from Sept. 30th, 1918, to April 30th (since demobilised).

Pilot Officer (actg. Flying Officer) L. Freeborn, M.B.E., relinquishes actg. rank of Flying Officer on ceasing to be empld. as Flying Officer, Grade (A), Nov. 22nd.

Sec. Lt. A. G. Allan to be Sec. Lt., Grade (A), from (Ad.), Aug. 10th, 1918.

Sec. Lt. H. L Vahey to be Sec. Lt., Grade (A), from unempld. list, Nov. 6th, with prec next below S. Maunder.

Pilot Officer J. H. Furniss, M.B.E., relinquishes the grading for pay and allowances of Flight Lt. on ceasing to be empld. as Flight Lt., Grade (B), Nov 30th.

Flight Lt. P. P. Gaskell relinquishes his commn. on ceasing to be empld., and is permitted to retain his rank, Sept. 22nd.

Sqdn. Ldr. A. W. Colley (Maj., N. Lancs. R.) relinquishes temp. R.A.F. commn. on return to Army duty, Nov. 20th.

Transferred to the unempld. list:—Capt. H B. Griffiths, April 1st; Sec. Lt. D. Humphrey, May 20th; Sec. Lt. G. D. Croskery, July 17th; Lt. C. S. McFie, Aug. 5th; Capt. P. W. Goodchild, Sept. 4th; Lt. P. M. H. Currie, Sec. Lt. G. W. H. Hogan, Sept. 28th; Lt. A. P. Beal, Sec. Lt. E. B. McLaren, Sept. 29th; Lt. B. H. McLeod, Oct. 2nd; Sec. Lt. W. J. Mabey, Oct. 4th; Sec. Lt. A. S. Kessler, Oct. 6th; Lt. D. Richardson, Oct. 30th; Lt. W. W. Bull, Maj. J. Dickson, O.B.E., Nov. 1st; Lt. W. E. N. Clark, Nov. 10th; Lt. C. P. W. Jolliffe, Nov. 11th; Lt. F. Begley, Nov. 12th; Sec. Lt. E. Barter, Nov. 15th; Lt. H. C. Bishop, Sec. Lt. W. J. Brittain, Lt. A. S. Hooppell, Nov. 16th; Sec. Lt. A. F. B. Cannon, Nov. 18th; Sec. Lt. H. G. Bill, Sec. Lt. E. A. Masters, Nov. 19th; Lt. W. W. McDonald, Lt. H. A. B. Miller, Nov. 20th; Capt. C. A. Proctor, Nov. 20th.

Sec. Lt. (Hon. Lt.) M. W. J. Kelly relinquishes his commn. on account of ill-health (caused by wounds), and is permitted to retain the rank of Lt., Dec. 2nd.

Lt. J. G. Proger is dismissed the Service by sentence of a General Court-Martial, Oct. 23rd.

The notification in the "Gazette" of Nov. 7th concerning Sec. Lt. E. W. Barton is cancelled.

Medical Branch.—Flight Lt. (actg. Sqdn. Ldr.) W. Darling, M.C., to be actg. Wing Comdr. whilst specially employed, Nov. 1st.

Flight Lt. (actg. Sqdn. Ldr.) H. M. S. Turner, M.B.E., to be actg. Wing Comdr. whilst so empld., Dec. 1st.

Flying Officers to be Flight Lts.:—P. C. Parr, Aug. 14th; M Hyman, Oct. 31st; A. Briscoe, Nov. 19th; E. G. O'Gorman, Nov. 21st; C McC. Jones, Nov 25th; S. G. Seymour, Nov. 26th; W. E. Sheil, Nov. 27th.

Transferred to the unempld. list:—Capt. J. A. Johnson, Nov. 12th; Lt. M. M. Price, Nov. 19th.

The surname of G. Packham is as now described, and not "Packman," as stated in "Gazette," Aug. 8th, 1918.

Chaplains Branch.—The Rev. B. W. Keymer, O.B.E., relinquishes appt. of Deputy-Chaplain-in-Chief and relative rank of Sqdn. Ldr. on ceasing to be empld. as Deputy-Chaplain-in-Chief, and reverts to rank of Chaplain, with relative rank Flight Lt., Oct. 20th.

The Rev. J. L. Thomas, M.C., is transferred to unempld. list, Nov. 29th.

Memoranda.—Overseas Cadet 91666 R. M. Haldane is granted an hon. commn. as Sec. Lt., Jan. 31st.

The following Probty. Flight Officers are granted hon. commns. as Sec. Lts.:—H. J. Drew, Feb 23rd; N. J. C. Clark, H. Knight, March 7th; E. W. Alston-Smith, April 11th; N. G. Durham, May 19th.

The following Cadets are granted hon. commns. as Sec. Lts.:—180280 A. R. Lusk, Jan. 6th; 176317 R. M. Campbell, Jan. 15th (substituted for notification in "Gazette," Aug. 19th, wherein this cadet's number was stated as 126312); 318632 D. J. Sherlock, March 26th; 176117 H. E. Rees, March 27th; 175125 T. I. Hodge, April 4th (substituted for notification in "Gazette," May 30th, wherein this cadet was described as 17125 T. T. Hodge); 37081 W. P. G. Branson, May 31st; 11395 W. E. Smith, Sept. 14th.

Wing Comdr. J. W. O. Dalgleish, O.B.E., is placed on half-pay list, Dec. 10th.

Air Ministry, Dec. 12th.

R.A.F.—The following officers have been granted short service commissions in the ranks stated, with effect from Dec. 12th. They will retain their seniority in the substantive rank last held by them prior to the grant of the short service commission.

In the case of officers now gazetted Flying Officer or Observer Officer, from Pilot Officer or Probationary Flight Officer, seniority will date from the date of "Gazette":—

Flight Lts.—G. H. Hooper, M.C., D.F.C. (A.); C. T. Lally, M.C., A.F.C. (A.); C. E. M. Pickthorn, M.C. (A.); E. M. Pollard (A.); F. J. Powell, M.C. (A.); R. S Smith (K.B.)

Flying Officers.—G. H. Allison (A.); M. Ballard (A.); G. C. Bladon (A.); M. Burbidge (A.); R. Clelland (T.); J. Cottle, D.F.C. (A.); F. H. Davies, M.C. (A.); N. L. Desoer (A.); L. C. Dodkins (A.); C. A. Elliott (T.); E. T. H. Ellis (A.); W. V. N. Grant (A.); B. R. Harris (A.); L. N. Hollinghurst, D.F.C. (A.); J. S. Hughes (A. and S.); S. Jones, D.F.C. (A.); H. R. Junor, D.F.C (A.); E. G. Keeping (A.); J. L. Kirby (A.); I. E. McIntyre, A.F.C. (A. and S.); H. W. McKenna, D.C.M. (T.); G. Martyn (A.); A. Miller (A.); J. L. Montgomery (A.); F. A. Norton (A. and S.); G. S. Oddie (A.); R. M. Rankin (A.); N. M. S. Russell (A.); A. W. Saunders, D.F.C. (A.); W. J. Seward (A.); O. E. Sharpe (A.); B. E. S. Smith (A.); R. de L. Stedman (A.); C. F. Toogood (A.); F. R. Wynne (A.).

Observer Officers.—H. A. Cooper, M.C., A. J. Cox, R. S. Greenslade, E. Major Greenwood, W. G. Hanton, P. Hardy, M.C., R. McK. Jamison, D.F.C., C. H. F. Nesbit, G. L. Nicholson, J. J. W. Nicholson, D.F.C., A. E. Reynolds, A. D. Sinclair, G. R. Terry, A. F. Wynne.

Flying Officers (from Pilot Officers).—E. A. C. Britton (A.); H. A. Dinnage (T.); F. R. Eason (A.); D. D. MacA. Eastwood (A.); E. N. Fenton (A.); H. W. Gill (A. and S.); D. E. Hall (A. and S.); E. N. Hewitt (T.); C. E. Howley (A.); D. G. R. Lord (A.); J. A. McDonald (T.); J. W. F. Merer (A.); W. Parkinson (T.); W. E. Purdin (A. and S.); B. H. C. Russell (A.).

Observer Officers (from Pilot Officers).—H. Alexander, L. W. Beck, C G. Boothroyd, D.F.C., F. W. Brown, R. A. Brunton, M.C., A. H. Darnbrough, J. Davison, L J. Hoare, W. McGowan, B. J. Malyan, D. H. Murray, R. T. Rich, H. Taylor, M.C., A. L. Wilcox.

Flying Officer (from Prob. Flight Officer—Late R.N.A.S.)—D. C. Duncan (A.).

(To be continued.)

PERSONAL NOTICES.

MILITARY.

Engagements.

FLOOD-PAGE—BREACH.—The marriage arranged between Philip Horsley Flood-Page (late captain, R.A.S.C., T.F., and R.A.F.) and Barbara (Betty), youngest daughter of Mr. and Mrs. W. Powell Breach, of Newham, Steyning, will take place at Steyning on Jan. 10th.

LEATHLEY—FOSTER.—A marriage has been arranged, and will shortly take place, between Mr. Forde Leathley, M.C., R.A.F., son of the Rev. J. Forde Leathley, Rooske, Dunboyne, Meath, and Ida, daughter of the late Mr. George Edward Foster and Mrs. Foster, of 7, Bickenhall Mansions, W.

Marriage.

WHEATLEY—HODGKINSON.—On Dec. 4th, at All Souls Church, Langham Place, Lieut. E. S. Wheatley, D.F.C., son of Col. H. S. Wheatley, C.B., S.M., of The Knoll, Farnham, was married to Dorothy, eldest daughter of Dr. Alexander and Mrs. Hodgkinson, of Bradshaigh, Farnham, Surrey, formerly of Manchester and Wilmslow.

AIR FORCE.

Death.

HALLINAN.—Capt. Charles Joseph Hallinan, late R.A.F., who died on Dec. 7th at the Mercy Home, Cork, was the elder son of Patrick Hallinan, of Cloonmullin, Midleton.

Engagements.

MACKENZIE—METFORD.—The engagement is announced between Capt. R. M. B. Mackenzie, R.A.F., youngest son of the late H. A. O. Mackenzie, and of Mrs. Mackenzie, of Belsize Park, Hampstead, and grandson of the late Sir George Mackenzie, Bart., of Coul, and Margaret Cecilia, only daughter of the Rev. G. A. S. Metford (late Minor Canon, and Sacrist of Bristol Cathedral) and Mrs. Metford, of St. Michael's Rectory, Sutton Bonington, Notts.

RIDLEY—BOLTON.—An engagement is announced between Lieut. E. L. Ridley, R.A.F., elder son of Mr and Mrs. W. E. Ridley, of Heathfield, Coulsdon, Surrey, and Leslie, younger daughter of Mr. and Mrs. St. Clair Bolton, of 6, Hyde Park Mansions, W.

Marriages.

HOWETT—ALDRICH.—On Dec. 10th, at the Catholic Church, Farnborough, Capt. J. R. Howett, R.A.F., younger son of Mr. and Mrs. R. Howett, of Market Harborough, was married to Hilda May, youngest daughter of Mr. and Mrs. W. A. Aldrich, Woolwich, by the Rev. Father Giltinan.

URQUHART—WILSON.—On Dec. 10th, at St. Anne's Church, Aigburth, Lieut. Frank Alexander Urquhart, R.A.F., of Edmonton, Alberta, was married to Geraldine Lucy Milne, elder daughter of Colonel G. Adshead Wilson, V.D., and Mrs. Wilson, of Aigburth, Liverpool, by the Rev. Canon W. E. Sims, M.A., Vicar.

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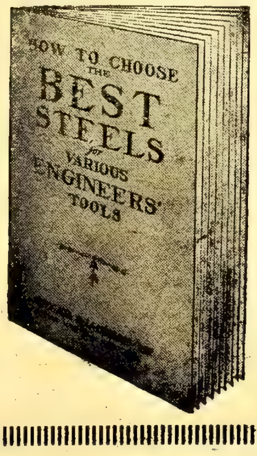

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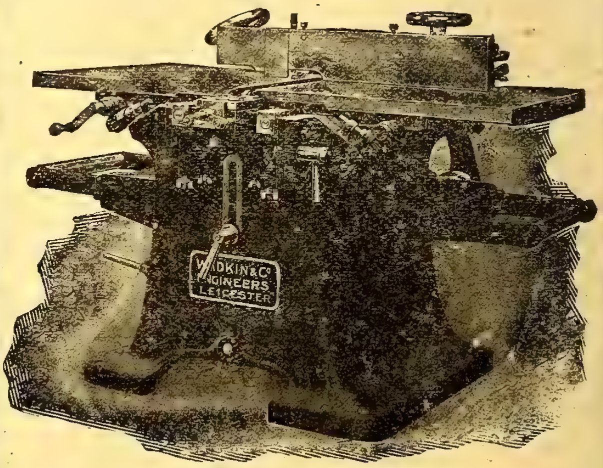

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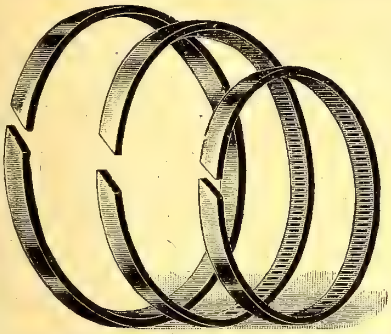

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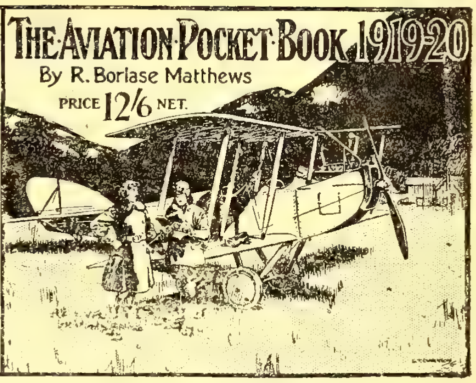

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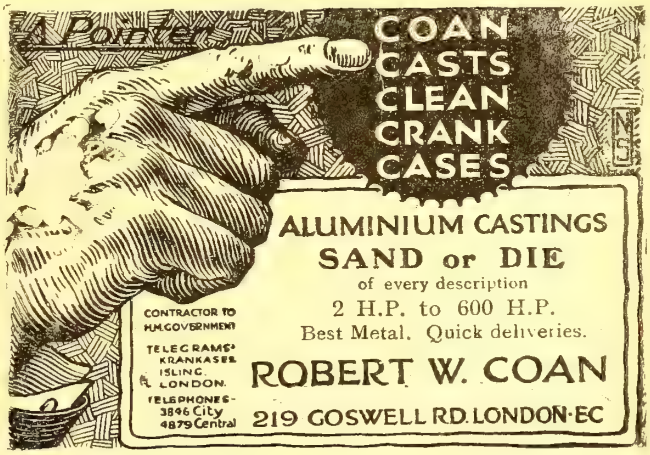

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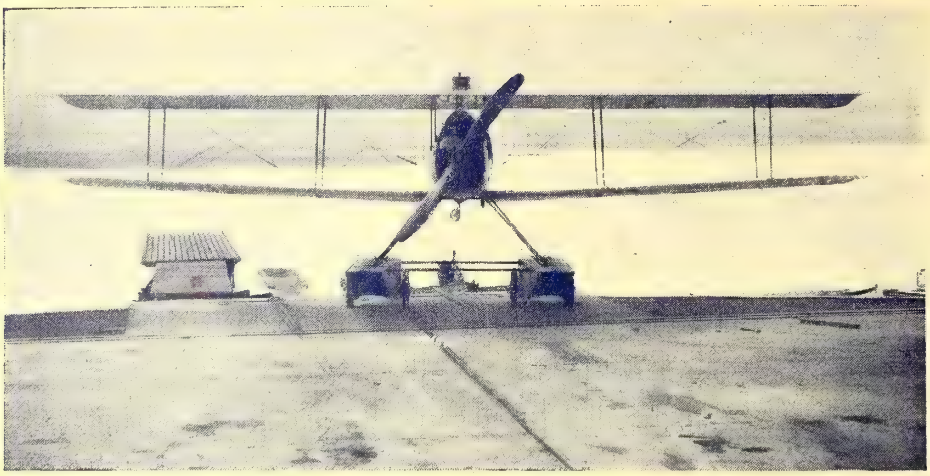

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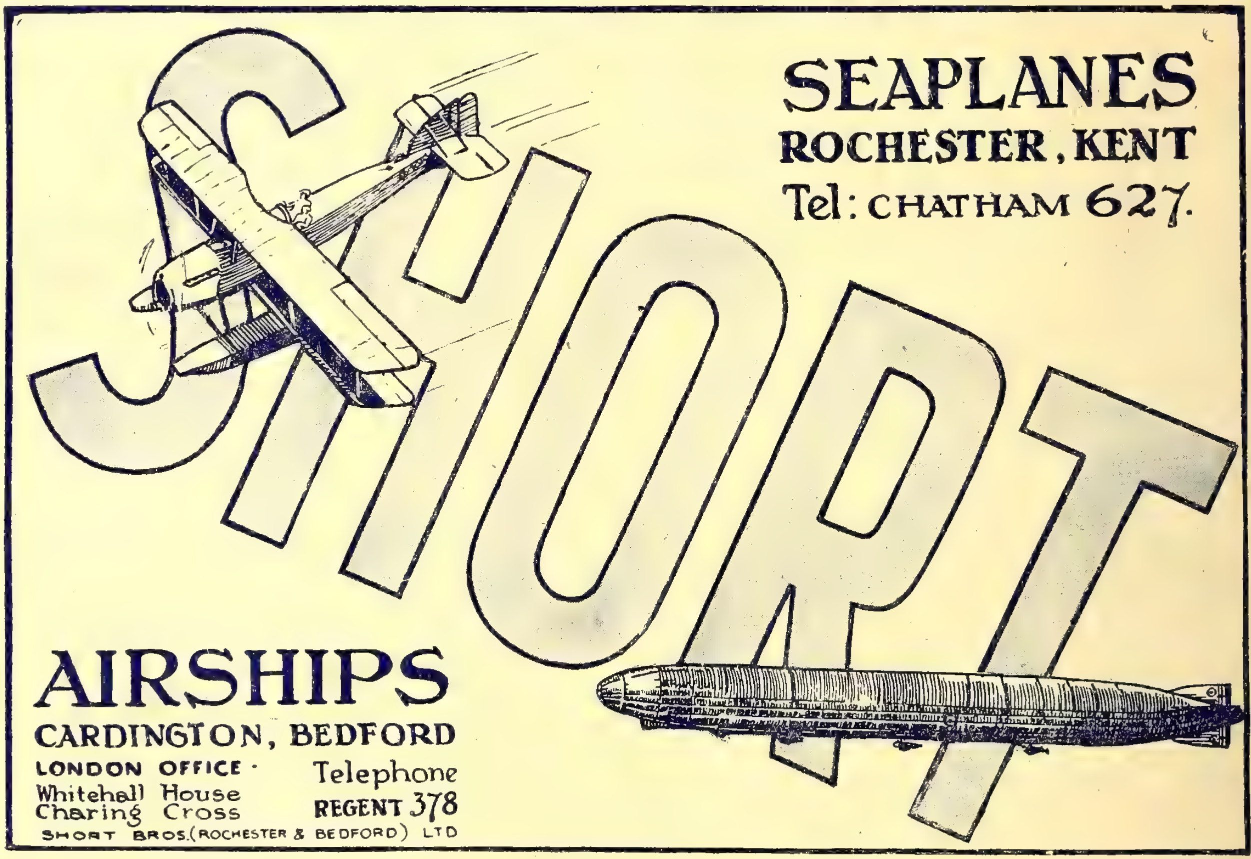

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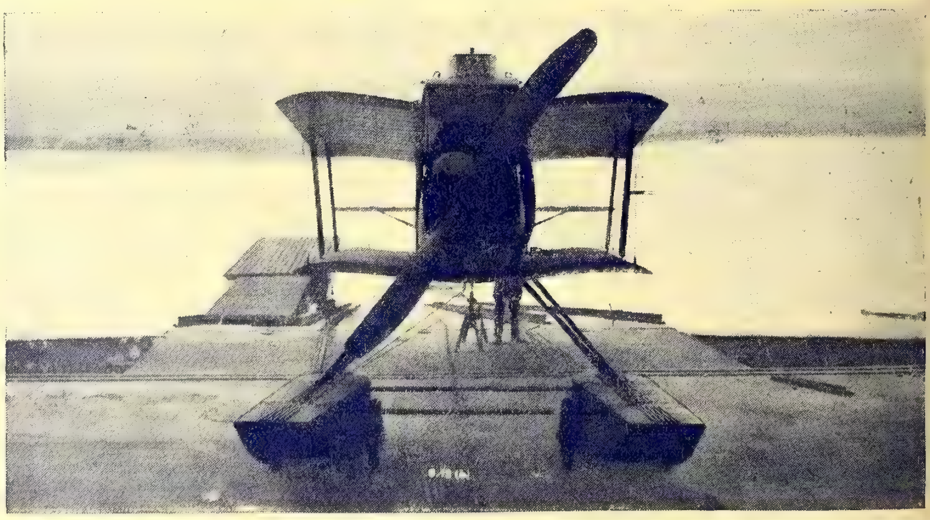

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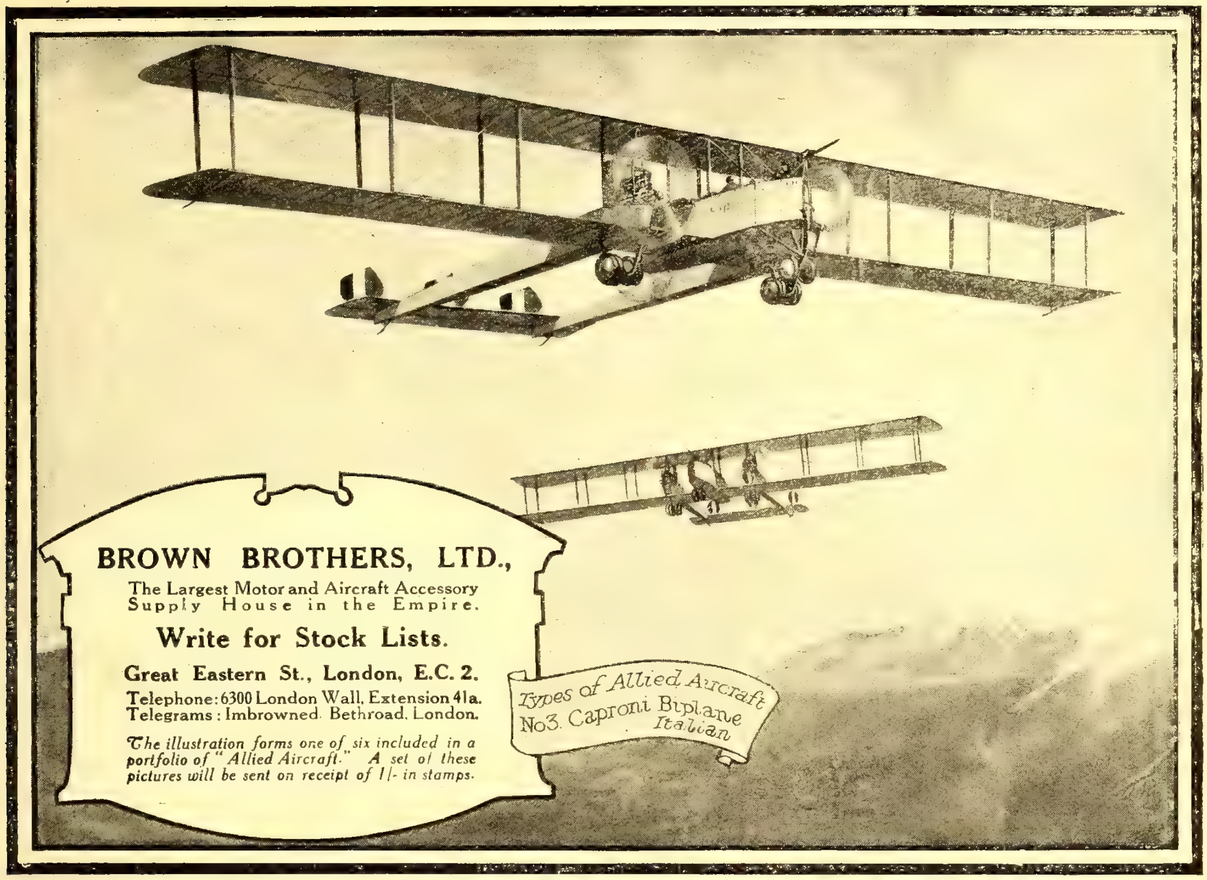

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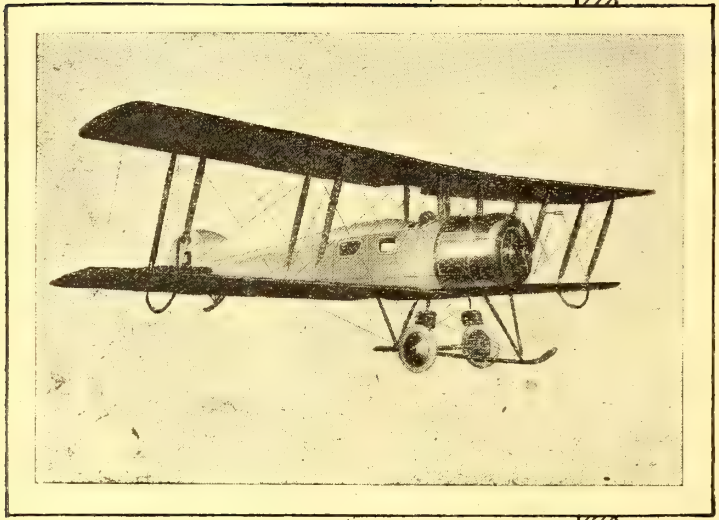

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Parceque nos amis français—pour toujours nos Alliés dans les guerres futures, bien qu'aujourd'hui nos rivaux dans le monde commercial—jouissent du succès bien mérité d'une exposition aéronautique à laquelle quelques uns seulement des membres de la " Society of British Aircraft Constructors " sont représentés, il semble opportun de passer brièvement en revue ce que les dessinateurs britanniques d'avions ont fait dans le passé pour développer l'art et la science de voler et pour améliorer et perfectionner les aéroplanes et les aéro-moteurs.

Il est admis que le crédit des premières vraies connaissances acquises dans les airs au moyen des planeurs appartient à l'Allemagne, grâce à feu le regretté Professeur Otto Lilienthal. Il est admis que le crédit du premier vol en aéroplane à force motrice appartient aux Etats-Unis, grâce aux frères Wright. Il est admis que les vols pleinement controllés et les premiers faits acrobatiques dans les airs se placent aussi au crédit des Etats-Unis, grâce aux planeurs de feu le Professeur Montgomery. Il est admis que le premier essor donné à l'aviation est au crédit de la France, grâce aux frères Voisin, Louis Blériot, Henri Farman, feu Léon Delagrange, feu le Capitaine Ferber et grâce au support financier de feu Henri Deutsch de la Meurthe. Il est admis que les usages pratiques de l'aviation ont émané de la France grâce au moteur Gnome dû aux frères Seguin. Mais bien que la Grande Bretagne n'ait eu aucune part active dans tous ces développements, il est juste d'attribuer aux dessinateurs britanniques le crédit d'avoir fait l'aéroplane moderne ce qu'il est.

Les Premiers Biplans et Triplans.

Au crédit d'un dessinateur d'aéroplane purement britannique se place le remarquable succés de la production du triplan Avro de 1909 et le début de 1910. C'est l'avion que Mr. A. V. Roe pilota si bien avec un J.A.P. Moteur de 8 cylindres. Cet appareil lorsque construite en 1910 avec un moteur Green de 35 h.p. était indubitablement un des meilleurs avions de son temps, et était au fait le premier triplan satisfaisant.

Ce point est spécialement important et digne d'attention, parcequ'il est probable que l'arrangement de la surface des ailes dans un triplan jouera un role important dans le développement des grands avions de l'avenir. Ce point est également digne d'attention par le fait que durant la guerre les triplans ont été employés avec tant de succés par toutes les armées.

En 1911 Mr. A. V. Roe produisit son biplan avec le même moteur Green de 35 h.p. et de cet appareil dérivent certainement tous les biplans à hélices tractives qu'on emploie avec succès aujourd'hui. Et en rapport avec ce fait, il est spécialement intéressant de noter ici que le biplan Avro de ce jour, connu officiellement sous la dénomination Type 504K., qui est le successeur immédiat du petit appareil à moteur Green via l'appareil à moteur Gnôme de 80 h.p. de 1913, est sans aucun doute l'aéroplane le plus en usage par le monde entier. Il ne peut y avoir que trés peu de pays ou l'Avro n'est pas en usage courant. Il est certainement employé dans les limites du cercle arctic et également dans l'afrique du Sud et en Australie, du côté opposé de l'équateur. Il était employé comme avion type pour l'entrainement pendant la guerre et depuis l'armistice ce type d'appareil a transporté plus de passagers civils qu'aucun autre type d'aéroplane. Ceci sans un seul accident fatal.

Dans son genre, aucun appareil n'a atteint le succès de l'Avro. Il est aussi digne de remarquer le fait que, en 1912 Mr. Roe produisait le premier appareil entièrement fermé, ou " limousine,"," un nouveau type d'avion.

Les Premiers Hydravions Satisfaisants.

La Grande Bretagne peut aussi revendiquer une place préponderante dans une catégorie de travail tout à fait différente. Il est admis que le premier avion s'élevant de l'eau était un " Curtiss," dessiné, construit et piloté par notre estimé ami Glenn Curtiss. Mais le plus grand développement des Hydravions est au crédit de Short Brothers. Aucune autre firme ne s'est consacrée aussi complètement ni pour une aussi longue durée de temps au travail des hydro-aéroplanes.

Feu Horace Short consacra son étonnante intelligence, qui avait déja perfectionné la turbine à vapeur, à la production d'un aéroplane assez fort pour traverser la mer. et le premier biplan à hélice tracteur Short avec le moteur Gnôme de 80 h.p. en fut le résultant en 1912. Celui-ci fut suivi par toute une série de hydravions avec doubles Gnômes de 160 h.p. 14 cylindres, moteurs Salmson à cylindres radials de 150 h.p., et plus tard avec les Sunbeams, d'abord de 150 h.p., puis 225 h.p., et plus tard encore, vers la fin de la guerre, de 260 h.p.

C'est avec ces trois derniers types qu'ont été faits presque tous les travaux navals dans l'air, soit bombarder les villes cotières allemandes, soit patrouiller la Mer du Nord et la Manche en quête de sous-marins, soit bombarder les positions allemandes sur la côte belge, soit patrouiller la Méditerrannée, soit établir un barage dans l'Adriatique, soit observer les positions ennemies en Bulgarie et en Gallipolie, soit photographier et bombarder les lignes de chemin de fer à 100 miles à l'interieur du pays en Palestine, soit corriger un bombardement dans l'Est africain allemand, soit faire des recherches dans l'Océan Indien pour découvrir les destroyers des navires commerciaux, soit patrouiller en Mésopotamie, soit distribuer des vivres dans Kut ou lancer des torpilles dans la mer de Marmora. A vrai dire une étonnante variété de travaux.

Les Premiers Appareils a Ailes Pliantes et les Premiers Appareils a Torpilles.

C'est aux Short Brothers qu'appartient le succés des premières ailes pliantes. Ce simple arrangement jouera un plus grand rôle dans l'aviation commerciale que dans la guerre, car dans le commerce l'espace comme le temps vaut de l'or.

C'est encore aux Short Brothers qu'appartient le premier succès des flotteurs á pontons. Plus tard c'est encore les appareils Short qui sont les premiers lanceurs de torpilles.

Les Premieres Ailes Variables.

C'est à un disciple de Horace Short, C. R. Fairey, un génie d'une plus jeune génération que revient l'honneur d'avoir construit une aile à courbature variable, donnant un atterrissage lent et un plus grand essor au départ., ceci, permettant d'obtenir un hydravion fonctionnant avec la facilité d'un aéroplane de grande vitesse. Ici nous nous trouvons de nouveau devant une question qui aura encore plus d'importance en temps de paix qu'en temps de guerre.

C'est aussi a C. R. Fairey que doivent être attribués les dessins du plus grand aéroplane du monde, un bateau-volant comprenant 5 moteurs Rolls-Royce " Condor " de 600 h.p. chacun. Ce géant de 3,000 h.p. est, parait-il, presque prêt pour l'expérimentation. Au fait la machine aurait déja pris son vol plusieurs mois, si ce n'etait que la firme Rolls-Royce est plus difficile à satisfaire quant à la perfection de ses propres moteurs que ne le sont ses clients, et c'est ainsi que les expérimentations ont été remises jusqu'au moment où la firme Rolls-Royce sera certaine que le " Condon " est un digne companion pour le " Eagle " et " Falcon."

Le Premier Grand Avion de Combat.

Nous reportant une fois de plus au debût de l'ère de l'aviation, nous trouvons une firme britannique qui certés a guidé le monde dans son genre de travail. " The British and Colonial Aeroplane Co.," plus généralement connue sous le nom de " Bristol Co.," a établi sa réputation en 1910 et 1911 comme constructeurs des fameux Bristol " Box-kites," de simples biplans construits strictement d'après les plans du biplan Farman, et renommé par la perfection de sa main d'œuvre.

Le premier appareil construite d'après un dessin de la firme même, dessin dû à l'eminent dessinateur Frank Barnwell, la " Bristol Bullet " fit rapidement son nom comme étant le mono-place le plus rapide de son temps, bien qu'il ne fut pas généralement employé pendant la guerre. Mais cette apparente indifférence pour une aussi bonne machine est compensée par le remarquable succès du " Bristol Fighter " qui plus que tout autre avion contribua à assurer la domination des airs au Royal Flying Corps en 1917.

Pourvu du moteur Falcon de la firme Rolls-Royce, ce biplace de combat avait tous les avantages d'un monoplace. Il était si rapide et si manœuvrable, sa résistance et la qualité de sa main d'œuvre si parfaites, que les pilotes le montaient avec une confiance inébranlable et l'employait pour chasser l'ennemi comme personne n'avait pu le faire jusqu'alors dans un biplace. Depuis la cessation de la guerre cet appareil a été modifié et transformé en un appareil de voyage des plus confortables, ses grandes qualités aérodynamiques considérables le rendant très utile pour cet emploi.

Le dernier succès notable de la " Bristol Co." est le grand triplan " Braemar " un avion de luxe pour passagers, à quatre moteurs. Ce dessin britannique se distingue par le fait que cet appareil est de beaucoup le plus rapide et le plus facile à manier des triplans à plusiers moteurs, tous les autres avions de ce type étant plus lents et peu dociles au maniement.

Le Premier Biplan de Grande Vitesse.

Un autre pionier de l'aviation britannique peut revendiquer une innovation qui marque une époque dans l'ère des dessin d'avions. Le premier de tous les petits avions qui volaient avec succès, était le " Tabloid " de Sopwith, avec un moteur Gnôme de 80 h.p. Cet appareil était dû aux efforts combinés de T. O. M. Sopwith, H. G. Hawker et F. Sigrist. Cet appareil atteignait une vitesse maximum de 95 miles par heure et une vitesse minimum de 40 miles par heure, un écart de vitesse qui jusqu'alors avait été considéré impossible. De ce type proviennent tous les " destroyers," les " appareils de chasse," les "appareils de poursuite" de toutes les nations belligérants. Et cet appareil type peut à juste titre être considéré comme l'ancêtre de tous les petits avions de bas prix du temps présent et de l'avenir.

Le premier descendant direct du " Tabloid " était l'avion dans laquelle C. H. Pixton remporta le trophé Schneider pour Hydravions en 1914. Ce petit hydravion, avec moteur monosoupape Gnôme de 100 h.p., étonna les dessinateurs d'avions à Monaco, et c'est de cet appareil que dérivent tous les petits hydro-aéroplanes, depuis le type Schneider de la R.N.A.S. jusqu'au vicieux petit appareil allemand " Brandenburger."

Si nous considérons l'arbre généalogique des avions pour traversées au dessus des terres, nous voyons que le " Tabloid " est l'ancêtre du " Pup," du " Camel " et du " Snipe " chacun de ces appareils étant à son tour le principal avion de chasse de la guerre.

Dans l'ère de la paix son dernier degré de parenté est l'avion anonyme construite pour la malheureuse course pour le Schneider trophé de cette année, pourvue d'un moteur Cosmos du nom de " Jupiter." Depuis que des roues ont remplacé dans cette machine les flotteurs, elle a atteint une vitesse avec laquelle elle se range probablement comme l'appareil le plus rapide du monde entier.

Le Premier Appareil de Grande Vitesse a Longs Relais.

Nous retournant dans une autre direction, nous trouvons une des premières firmes britanniques de dessinateurs d'avions figurant au premier rang par leur mérite. H. P. Martin et G. H. Handasyde commencérent à construire leur premier avion en 1908. Plus tard ils produisirent un grand monoplan, qui, avec sa forme " Antoinette," se range comme la machine la plus belle et la plus minitieusement achevée de son temps.

Au début de la guerre, les associés, connus comme maintenant d'ailleurs sous le nom de la Martinsyde Co., construisirent un petit monoplace à moteur Gnôme, spécialement dessiné en vu d'obtenir une grande résistance, pouvant supporter le manque d'adresse du pilote à main et à pied lourds. Plus tard apparait le grand monoplace " Elephant " de la Martinsyde Co., pourvu du moteur Beardmore de 120 h.p. (plus tard 160). Cet appareil se distingua par son travail de bombardement. Et en 1917 la firme Martinsyde produit le fameux " Mother," monté d'un moteur " Falcon " de la firme Rolls-Royce, qui bat le record de la vitesse du monde entier par plusieurs milles à l'heure.

Cette dernière machine s'est à présente développée dans le type " F.4 " un modèle pour tout dessinateur qui veut étudier la combinaison dans une seule machine des qualites de main d'œuvre, de résistance, et de vitesse.

Sans être une machine de course, le " F.4 " est presque aussi rapide que les avions les plus rapides, et c'est un appareil dans lequel aucun pilote n'hésiterait à entreprendre le tour du monde.

Pourvue de flotteurs, qui en eux-mêmes sont une innovation dans le domaine de l'aviation, cette machine a une égale valeur comme hydravion et comme aéroplane.

Le Premiers Avions Multi-Moteurs.

Il est probable que c'est dans la production des avions multi-moteurs, que les dessinateurs britanniques sont le plus en avance sur les dessinateurs des autres pays. Il est presque certain que les premiers avions bi-moteurs du monde ont été les appareils construits par Short

Brothers pour le ministère de la marine en 1912-1913. Et probablement le premier appareil bi-moteur employé pendant la guerre a été le " Caudron."

Mais il est certain que le premier dessin moderne de ce genre a été dessiné par Flight-Commander Dyott avant la guerre, et construit (après une longue et forte opposition des authorités) par la firm Hewlett et Blondeau en 1915-16. Peut être considéré comme le contemporaire de cet appareil, le bi-moteur dessiné et construit par C. R. Fairey. Ces deux machines achevèrent des vols d'expérimentation très bons, mais des " experts " techniques se refusèrent à les accepter, ces experts n'étant pas encore initiés aux possibilités de ces nouvelles engins de guerre.

Les Premiers Appareils de Bombardement et de Transport de Passagers.

C'est grâce a l'éloquence persuasive et aux arguments décisifs de Frederick Handley Page qu'un département technique des plus obstinés et obstructifs permit enfin la construction d'un avion bi-moteur qui pouvait réellement voler. L'importance du résultat obtenu par H.-P. se mesure le mieux lorsqu'on se rend compte que le succès du H.-P. entraina l'annulation de certains dessins officiels très beau sur papier mais qui n'auraient jamais pu voler, bien que, alimentés par une force motrice suffisante, ces appareils auraient pu se trainer dans les airs par la force brutale et l'ignorance.

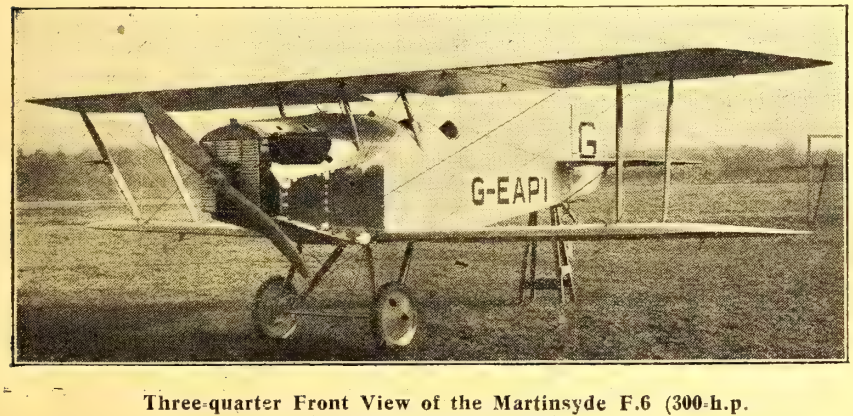
Depuis l'apparition du H.-P. à deux moteurs Rolls-Royce jusju'qu'a la dernière creation H.-P. qui fit la traversée de Londres a à Paris en 2 heures et 10 minutes avec 2 moteurs Napier de 450 h.p. chacun, le record de la Handley Page, Ltd., fut un grand succès. Sans faire mention de son excellent travail pendant la guerre, une des débutantes bi-moteurs fut la première machine qui emporta 20 passagers dans un seule vol. Plus tard, une des machines à 4 moteurs fut la première a emporter 50 passagers du coup.

Comme appareil à lever de poids et à traverser de grande distance, la H.-P. a été vraiment remarquable. Cette firme place à son actif le premier voyage de Londres à Constantinople, de Londres en Egypte, et le premier voyage de Londres aux Indes. Ce n'est que grâce a l'armistice que le voyage de Londres à Berlin ne se fit pas. Il se peut que la nouvelle appareil à moteurs Napier pourra faire pendant la paix ce que son prédecesseur ne put réaliser pendant la guerre.

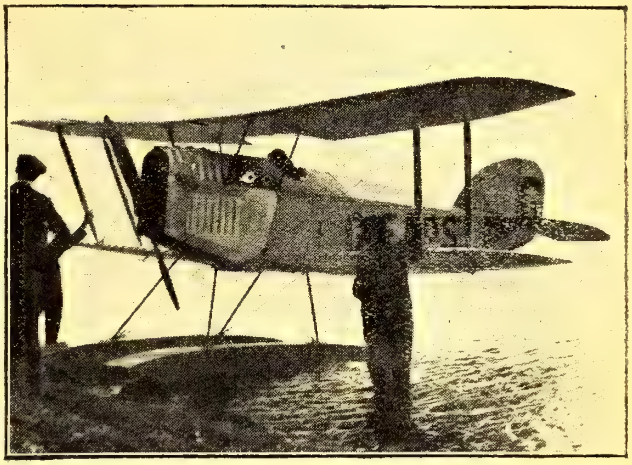
La Premiere Ligne Belge de Traffic.

Au crédit des avions Handley Page ce place aussi un beau record de vols en temps de paix depuis que l'aviation internationale est de nouveau permise.

Les services H.-P. entre Londres et Paris et entre Londres et Bruxelles ont fonctionné avec une régularité et **un succès remarquables.** En transportant des effets d'habillements aux Belges privés de tout, les H.-P. ont accompli à la fois un travail humanitaire et profitable.



Three-quarter Front View of the Martinsyde F.6 (300-h.p. Hispano-Suiza engine).



The Avro " Baby " Biplane (35-h.p. Green engine), fitted with floats.

Nous tenons à rappeler que le fondateur de la firme, F. Handley Page s'est occupé lui-même de dessins d'avions depuis 1908. En 1909 il commença à développer l'idée des machines stables, et il continua à étudier cette question et à construire des machines d'expérimentation jusqu'au moment où le commencement de la guerre prouva que la pratique est plus importante que la théorie.

La Premiere Avion de Terre Patrouiller les Mers.

Un autre pionier de l'aviation qui a remporté des grands succès avec les bi-moteurs est Robert Blackburn de Leeds, qui également commença ses expériences en 1908. Avant la guerre le monoplan Blackburn était deja très bien connu. Au début de la guerre la firme s'occupa de construire des avions d'après des dessins officiels, mais bientôt le génie du fondateur de la firme se consacra aux dessins personnels et il en résulta le Blackburn " Kangaroo ", à deux moteurs " Falcon " de la firme Rolls-Royce. Au début cette appareil devait être employé comme hydravion à flotteurs, mais presqu'instantanément elle fut convertie en avion a roues.

Malgré ce qui précéde l'appareil fut longtemps employé pour faire de longues patrouilles sur la mer du Nord, et à son avantage nous disons que cette avion a patrouillé les mers plus longtemps que tout autre machine de terre. L'appareil est facile a diriger de sorte que son pilote ne se fatigue pas vite.

Depuis la paix cette appareil fut exposée au Salon de la E.L.T.A. à Amsterdam. C'est là, que les deux " Kangaroos" prirent à bord le plus grand nombre de passagers dans le temps le plus court de toutes les autres machines, et les deux appareils rentrèrent en Angleterre sans nécessiter de raccommodages et ayant réalisé un joli petit benefice.

Les Premiers Aeroplanes Stables.

Dans un sens tout à fait différent, nous voyons un grand succés pour deux autres pioniers de l'aviation. En 1909 G. Holt Thomas, enthusiasmé par l'aviation qu'il avait fait en France, décida Louis Paulhan à venir démontrer en Angleterre. En 1910 il organisa le vol de Louis Paulhan qui remporta le prix pour le premier voyage aérien de Londres à Manchester. En 1911 il établit le Aircraft Manufacturing Co., Ltd., et commença la construction d'avions Farman. Plus tard il s'adjoignit Peter Hooker, Ltd., de Walthamstow, et commença la construction des moteurs Gnôme et Le Rhône.

En 1913 Geoffrey de Havilland, un ingénieur très doué se joint à lui. Ce dernier avait construit et piloté son appareil et son moteur à lui en 1909, et avait été nommé depuis dessinateur en chef du Royal Aircraft Factory où il produisit en tout premier lieu un biplan à hélice tractive en 1912, et un peu plus tard le fameux B.E.2c, le premier avion stable, en même temps qu'un appareil de vol de première qualité.

Les Premiers Avions de Bombardement en Plein Jour.

Le résultant de la combinaison fut la série des appareils "D. H." construits par le "Aircraft Mfg. Co., Ltd.," d'aprés les dessins de Geoffrey de Havilland.

Pendant la guerre le "D.H.2," à moteur Gnôme de 100 h.p., se distingua comme l'appareil de combat monoplace la plus efficace. Le "D.H.4," d'abord pourvu de moteurs Rolls-Royce, était le plus rapide des avions de bombardement à long relais de son époque.

Le "D.H.9" à moteurs "B.H.P.," et plus tard comme le "D.H.9a," à moteurs Liberty, se range parmi les avions de bombardement en plein jour encore plus rapides. Et à la fin de la guerre le "D.H.10," à moteurs Liberty, allait prendre service comme la plus rapide des avions à bi-moteurs de ce genre.

La Premiere Ligne Aarienne Londres-Paris.

Depuis la guerre les appareils "Airco," travaillées par la firme alliée "Air Transport and Travel, Ltd.," sous la direction du Général Festing, ont accompli le haut fait d'exploiter avec succès la voie des airs la plus importante du monde entier, sous les conditions géographiques et météorologiques les plus adverses. Malgré les brouillards et les tempêtes de la Manche et malgré le climat changeant de l'Angleterre, le service Airco a couvert plus de 50,000 miles entre Londres et Paris sans perdre ni un seul passager, ni un colis, ni un courrier. Leurs machines et leurs pilotes ont fait plusieurs voyages alors que le bulletin officiel marquait les conditions atmosphériques nefastes à l'aviation. Le pourcentage des jours auxquels il leur a été impossible de faire la traversée est extraordinairement minime.

C'est à la firme Airco que revient le crédit d'avoir prouvé d'une façon absolue que le transport par voie d'air appartient maintenant à la liste des propositions commerciales.

Le Premier Veritable Appareil de Combat.

Un autre grand succès dans l'aviation appartient également a une firme britannique. Vickers, Ltd., fut la première grande firme d'armement qui ouvrit un département à l'aviation, grâce a l'énergie de feu le Major H. F. Wood. Avant la guerre beaucoup de ceux qui se rangent maintenant comme chefs de notre service d'aviation, firent leur apprentissage sur des machines de Vickers, Ltd.

Au début de la guerre le seule avion de combat convenable était le biplan Vickers, à moteur Gnôme de 100 h.p., le résultat des efforts combinés de feu Harold Barnwell et G. H. Challenger. Pendant la guerre les usines Vickers construisirent d'énormes quantités de machines de différents types et en 1918 le fameux biplan "Vimy" fit son apparition, trop tard cependant pour prendre du service actif. Après l'armistice cette avion fut developpée en appareil civile par son dessinateur R. K. Pierson, et nous avons ainsi l'excellente aeroplane "Vimy."

La Premiere Traversee Transatlantique Directe, et le Premier Voyage aux Antipodees.

Avec une splendide initiative la firme Vickers entreprit la question de la traversée de l'Atlantique. L'organisation de cette entreprise fut dignement confiée au Capitaine P. D. Acland qui prit charge du département de l'aviation après la mort du Major Wood.

La traversée de l'Atlantique en un vol ininterrompu fut accompli avec un avion Vimy à deux moteurs Eagle de la firme Rolls-Royce, par le Capitaine John Alcock accompagné du Lieutenant A. Whitten Brown comme passager.

Et maintenant s'annonce l'arrivée en Australie de l'avion Vimy, encore à deux moteur Rolls-Royce, piloté par le Capitaine Ross Smith, avec comme passagers son frère Keith Smith et les sergents Bennett et Shiers. Vraiment un triomphe pour la maison Vickers.

La Premiere Revindication de l'Industrie.

De ce qui précède il est évident que les grands résultats obtenus en aviation, soit en temps de guerre, soit en temps de paix, appartiennent en grand partie aux pioniers britanniques.

Il sera avantageux a tous ceux qui ont l'intention d'equipper des services aériens militants, ou des services postaux, ou simplement des services de passagers, de considérer sérieusement les mérites des firmes britanniques avant de s'aventurer dans l'achat d'avions en grandes quantités.

Il n'est pas moins intéressant de noter que dans l'aviation en temps de paix les firmes britanniques ouvrent également la voie. Le fait que rapportait une publication officielle qu'aucun appareil spécial n'avait été construite pour l'aviation civile est décidément incorrect.

Les Premiers Avions Commerciaux.

Il semble donc utile de rappeler que le premier avion commercial du monde, dessiné a cet effet, a été produit au début de cette année par Mr. Frederick Koolhoven, de la British Aerial Transport Co., une firme créée pendant la guerre. Cette appareil officiellement dénommée "F.K.26," mais généralement connue sous le nom "Big Bat," est reconnue non seulement comme étant la première aéroplane commerciale, mais aussi comme étant un des meilleurs avions en tant que dessin et construction. Pourvu d'un moteur "Eagle" (Rolls-Royce) cet avion possède la vitesse d'une machine de guerre et se manie à la perfection.

Cet avion est un digne successeur du "Bantam" produit en 1917 avec un moteur "Wasp" de l'A.B.C. et qui fut rejetté par les "experts" du Ministère de l'Aviation, bien qu'à cette epoque cet avion était le meilleur monoplace de combat. En 1918 La "Basilisque" avec son moteur "Dragonfly" de 350 h.p. (A.B.C.) était egalement refusée, bien que plus rapide que toutes les autres avions de l'époque.

Il y peu de dessinateurs d'avions qui soient aussi versés dans la question que l'est F. K. Koolhoven.

Une autre appareil purement commerciale est la Westland "Limousine," produite par M. A. Bruce, précédemment un collaborateur dans la production de la torpille Brennan et le Brennan monorail. La Westland Co. fut formée pendant la guerre par la fameuse firme d'ingénieurs Petter à Yeovil, et leur "Limousine" est digne de leur réputation.

Le Premier Grand Canot-Volant.

La Grande Bretagne a ouvert la route dans une autre branche de l'aviation. Bien que les canots volants aient été organisés par Glenn Curtiss, ils one été perfectionés par feu John Porte, qui mourut avec le grade de Colonel de la R.A.F.

Ses canots-volants de Felixstowe, qui atteignent leur point culminant dans le grand bateau le "Felixstowe Fury" ont guidé le monde dans ce genre de travail.

Il est intéressant de noter que la construction des bateaux volants se continue par S. E. Saunders, Ltd., à Cowes, par la Supermarine Co., à Southampton, et par la Gosport Aviation Co. à Gosport. Short Brothers construisent également des bateaux-volants bien que premièrement ils étaient constructeurs d'hydravions à flotteurs-pontons.

Les Premiers Deserteurs.

Malheureusement beaucoup de grandes firmes qui ont construit de bonnes machines et réalisé d'énormes bénéfices pendant la guerre, se sont retirées de l'industrie de l'aviation. Mais probablement ils ne représentent qu'une petite perte pour l'industrie aéronautique, bien que leur argent eut été utile pour faire des travaux d'experimentation. En compensation d'autres grandes firmes se

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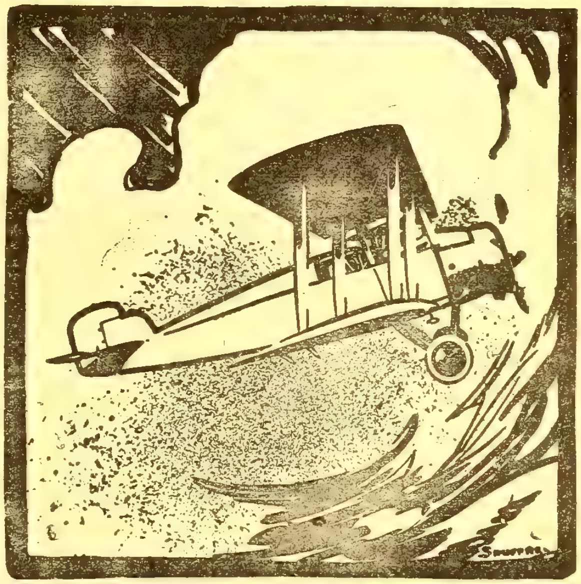

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maintiennent dans l'industrie pour continuer les travaux d'expérimentation jusqu'au moment ou l'aviation sera accepté comme proposition commerciale.

Les Premiers Succes dans la Nouvelle Industrie.

Parmi ceux-ci citons la Austin Motor Co., avec son Austin "Whippet"; Boulton & Paul, Ltd., avec leur magnifique bi-moteur "Bourges"; et MM. Beardmore & Co., Ltd., avec plusieurs différents types pour l'expérimentation. Ces maisons ont déja fait preuve de mérite et peuvent se classer avec les pioniers, et le "Nighthawk" de la British Nieuport Co. peut revendiquer une place parmi les avions les plus rapides du monde.

En résumé l'industrie britannique de l'aviation peut se mesurer avec les industries de la France et de l'Allemagne si on la juge d'après les accomplissements de ses produits.

Nous n'avons pas eu l'intention d'établir ici une histoire de l'aviation britannique. Il s'agit simplement d'un bref coup d'oeil dans le domaine de ce qu'ont fait nos avions et leur producteurs.

Nous espérons avoir été clairs et de quelque utilité a nos lecteurs.—C. G. G.

THE LATE JOSÉ WEISS.

Though the name of José Weiss, who died on December 11th, may mean but little to the present generation of aviators, he was, none the less, among those to whom aviation of to-day and of the future owes most, for to him was due very largely, even if indirectly, the development of the uncapsizable aeroplane. Though no aeroplane designed by José Weiss ever flew, in the presently accepted sense of the word, yet he showed many of the successful designers of to-day what it was possible for an aeroplane to do.

José Weiss was born in Alsace, and at an early age he came to England, as his father objected to living under German governance. On reaching man's estate he became a British subject and devoted himself to the profession of painting. He adopted Sussex as his model, and for years he painted that delectable county in all her moods, phases, and manifestations.

His name as an artist is, perhaps, not very well known to the vulgar many in this country, but his pictures were held in high esteem abroad, especially in America, where he sold the majority of his works. He worked fast and hard, and made money comparatively easily, and whatever money he made beyond his household expenses and his own simple needs he spent on his aeronautical experiments.

One first had the honour of meeting José Weiss early in 1909, when he was experimenting with his gliders at Amberley. At that time he had already achieved considerable success, and had developed the bird-like type of monoplane with which his name was associated.

This machine had a stout, stumpy body, with cantilever wings which were swept backwards and upwards, so that the two wing-tips acted as a tail. The wing-tips were, in fact, the whole control, for there was no rudder or elevator.

By dint of careful experimenting and reasoning Mr. Weiss had arrived at a perfect combination of horizontal and vertical surfaces, so that his machines were absolutely stable: that is to say, they were uncapsizable and self-righting. By warping the wing-tips up or down, the machine could be made to bank and turn to right or left as desired, and by pulling both wing-tips up together the machine could be made to throw its nose up and stall.

With José Weiss in his experiments at Amberley was associated his friend and neighbour Keith, also an artist. Between them they evolved a number of theories concerning the flight of birds, and they applied these theories to their models. Some of those theories have been recorded in print in letters and pamphlets written by José Weiss, and it would be well worth the while of our clever young designers of to-day to study them.

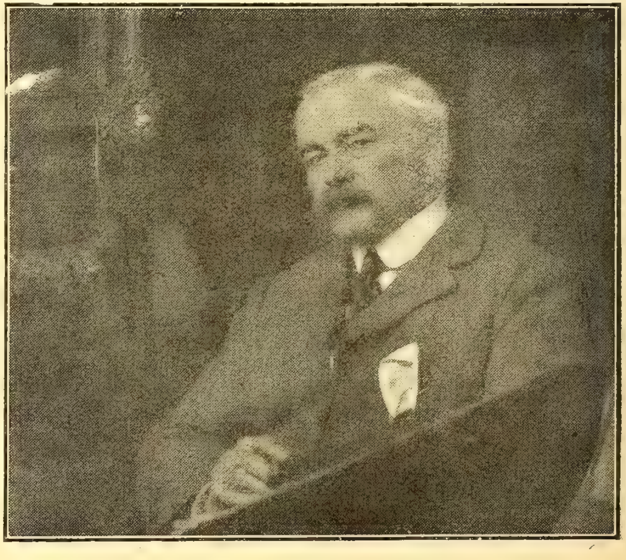
These theories appear to have been particularly right in connection with the design of the fuselages of aeroplanes, and it is a fact that the bodies of the most efficient modern machines approximate in shape to those advocated by José Weiss. Also it is interesting to note that the Weiss wings were of the cantilever type which now seems to be coming into use, especially in Germany.

In 1909 the experiments at Amberley progressed to the stage of building man-carrying gliders. These were piloted by Mr. Gordon England—later to become famous as a pilot, designer, works manager, and consulting engineer—and by Mr. Gerald Leake, a young artist-pupil of José Weiss, who has since done well as an artist in America. Greatly daring, these youths were launched, in these frail structures of linen and bamboo lashed together with waxed thread, from the top of Amberley Mount into the up-current of a wind blowing against the hillside, and on one occasion Mr. England rose to a height of 30 ft or so above the starting-point, landing eventually in the valley nearly a mile away.

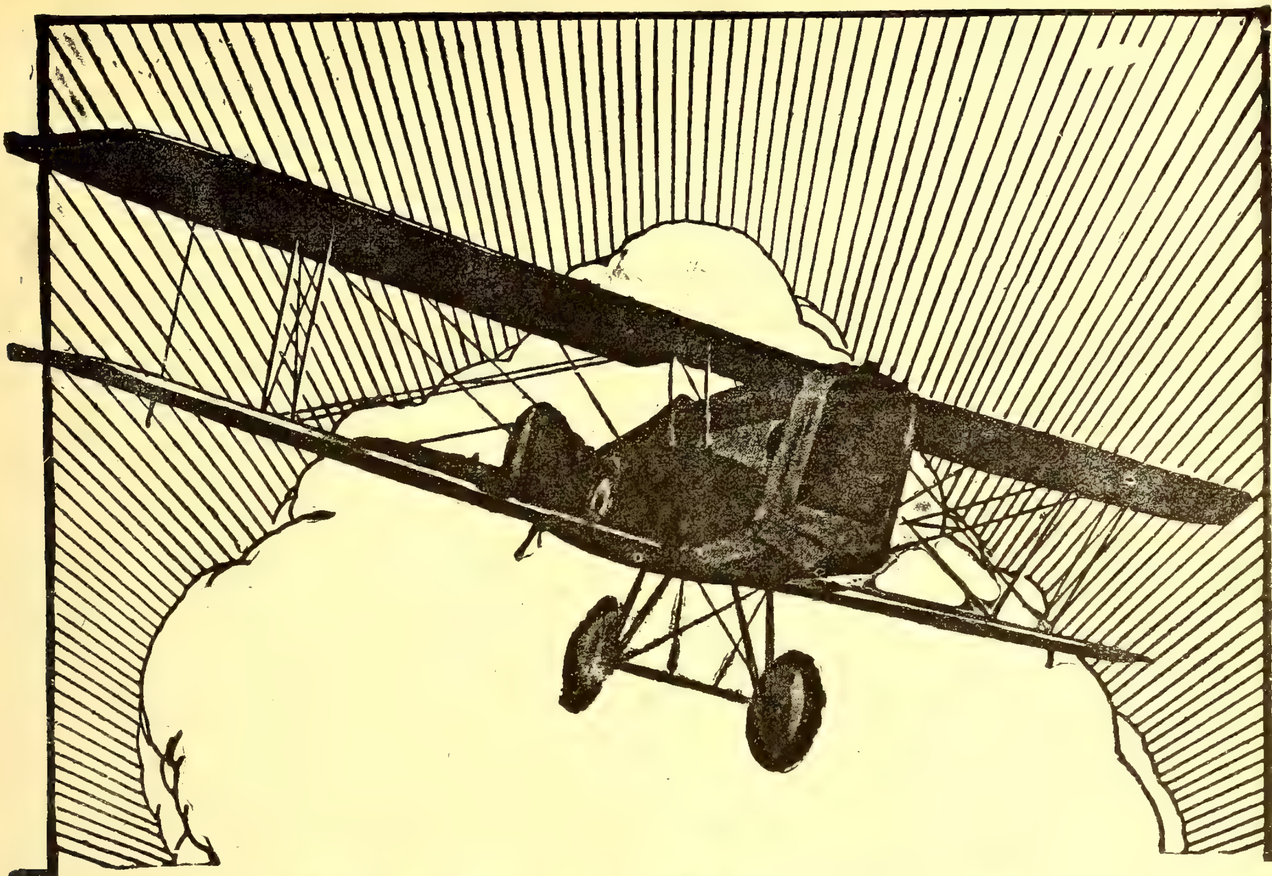
The success of these gliding experiments led to the building of a power-driven machine, which did in fact make straight flights on the sands at Littlehampton and at Brooklands. But, owing to an incompetent engine and to lack of knowledge of constructional detail work in the machine itself, it never flew satisfactorily.

Later Mr. Handley Page, then building experimental machines at Barking, interested himself in the Weiss theories and built several machines more or less on Weiss lines. One of these, piloted by the late Edward Petre, was the first aeroplane to fly through London, when it voyaged up the river from Fairlop in Essex to Brooklands. On the same machine and its successor much flying was done at Hendon by the late Wilfred Parke, R.N., and during 1914 a biplane on similar lines was flown by the late Rowland Ding, including a flight to France with a passenger.

Since then it has been found possible to achieve stability by means involving less complicated methods of construction, but the fact remains that the Weiss machines were a distinct step forward in the search for



THE LATE MR. JOSE WEISS.



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the uncapsizable aeroplane. It is, however, rather for his research work and for his theories as to the increase of efficiency in aeroplanes by way of body and wing design that José Weiss deserves to be remembered.

Of late years he and his friend Keith have been experimenting with a flapping-wing machine actuated by man-power only. Though nothing has been published about the results achieved, one believes that considerable success attended their efforts. José Weiss himself said that it was actually possible with their experimental machine for a man to lift his weight on the wings with the machine supported on slings between two trees, though they had not ventured to attempt a free flight. It is to be hoped that some record of these experiments will be available in the future.

José Weiss was by nature a philosopher as well as an artist, and it grieved him deeply that the aeroplane, which he regarded as the dove of peace which was to bring one nation into friendly intercourse with another, should first be made manifest rather as the eagle of war. He regarded war as wicked and wasteful, and could never bring himself to think of it as a biological necessity. His kindly and gentle nature abhorred the cruelty of it all, and he hoped that by the education of humanity the world's peoples might be taught to love one another.

At any rate, he had the satisfaction of seeing aerial communication growing into a practical proposition, albeit the machines which fly do so by means which do not accord with his theories. If the world held many people like José Weiss, this aerial communication of which we are all so proud would go far to produce universal peace. Unhappily there are few like him, and the world is the poorer for his loss.—C. G. G.

SIR JOHN ALCOCK, K.B.E.-1892-1919.

On Thursday afternoon, December 18th, 1919, Sir John Alcock died in hospital at Rouen as a result of an aeroplane accident at Côte d'Evrard, about 25 miles from Rouen. He had left England in the morning on a Vickers "Viking" biplane which was so designed as to be capable of alighting either on land or on water. He intended to fly to Paris and to alight on the Seine opposite the Grand Palais.

It is difficult, in the absence of detail, to judge the reason for the accident, but eye-witnesses state that at about one o'clock on December 19th they saw a large aeroplane approach in a very high wind. It became unsteady—in the eye-witnesses' view—and finally crashed to earth. The pilot, Sir John Alcock, was found in the wreckage, unconscious, with serious injuries to the head. He was removed to Rouen, was operated on without delay, but died without regaining consciousness at 4.30 p.m. on the same day.

There is always regret at the death of the great and the robbing of the earth of another of those spirits which illumine its progress, but there is peculiar sorrow at the loss of Sir John Alcock. Modest, unassuming, and quietly efficient, he had few, if any, enemies, and his general popularity was unquestioned.

Born of no distinguished line, supported by none of the extraneous advantages that come from wealth or worldly position, he earned the gilded spur by a successful endeavour that gave him a true place in the knightly succession which has kept chivalry alive throughout the centuries. None of those who have sought the great adventure in the past would hesitate to acknowledge him as of their class. Those who knew him best liked him the most, and that is the finest praise for any man.

The son of Mr. John Alcock, of Kingswood Road, Fallowfield, Manchester, he was born in that town in 1892. Eighteen years later he was apprenticed to the Empress Motor Works. A little later, if my memory is accurate, he became connected with the Sunbeam Company. In any case he was flying a Maurice Farman biplane, fitted with one of the earliest Sunbeam aeroplane engines, in 1911-12, taking his aviator's certificate—No. 368—on November 26th, 1912, at Brooklands.

At the outbreak of war he joined the R.N.A.S. and was posted to Eastchurch as an instructor. He was later made chief instructor to the "Acrobatic" Squadron—a curious inversion of his usual practice in life. After repeated efforts he succeeded in being posted to an active service unit. He was appointed flight commander at Mudros in 1917, and on September 30th in that year he was awarded the D.S.C. for gallantry in attacking three enemy seaplanes off Lemnos. In the long-distance bombing raids which gave distinction to the aviators at Mudros he took an active part until towards the end of the year he was brought down off Suvla by engine failure. Swimming ashore with his crew, he hid in the rocks for some hours, only to be captured in the end. All three were kept prisoners in Turkey until the beginning of the Armistice. He was then released.

On his return home he accepted an appointment with Vickers, Ltd., and early in the present year he left for Newfoundland with a Vickers "Vimy" biplane. All the world knows the story of his Atlantic flight with Mr. A. Whitten Brown, R.A.F., on June 14th-15th.

His Majesty the King, in appropriate recognition of the spirit of their endeavour, appointed them both to be Knight Commanders of the Order of the British Empire.

Since that time he continued in his work for Vickers, Ltd., unspoilt by his great success, and, as ever, entirely averse to any manner of unnecessary advertisement.

The sympathy of the world will be with his mother in her great loss. Her consolation may be found in the recollection of his achievements in the past, and that the death he would have chosen came to him in the end.

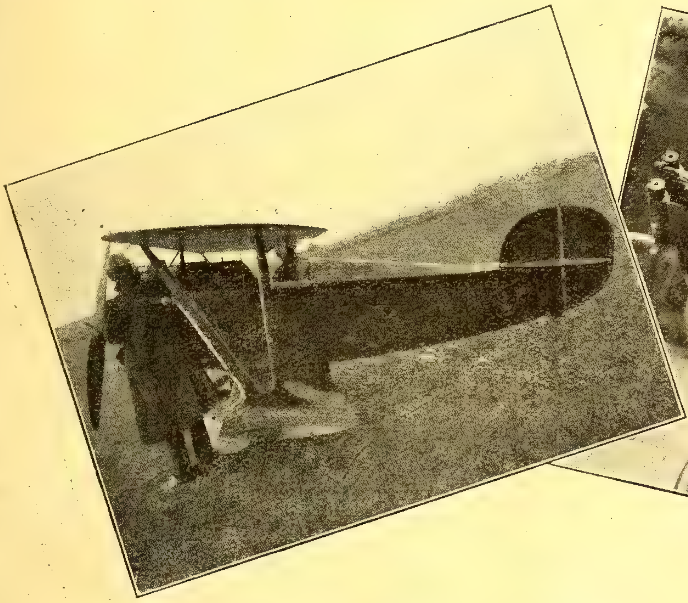
This entirely insufficient memoir will be supplemented next week by a further notice by one who knew him and liked him well.—W. E. de B. W.

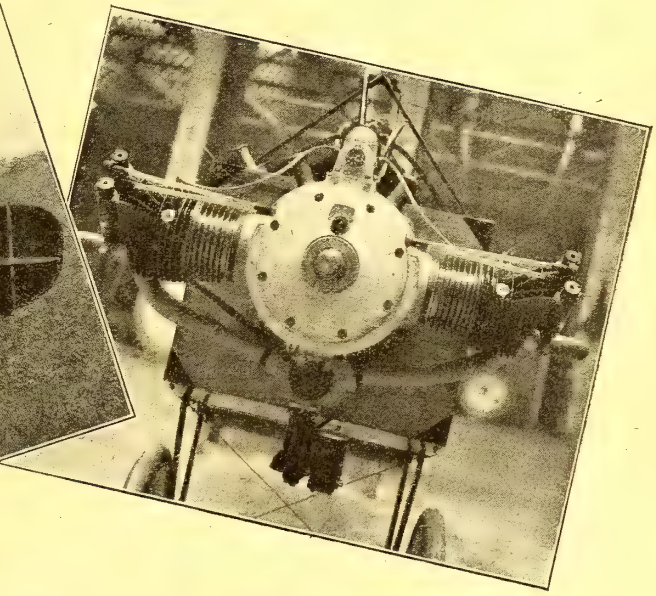
THE LATE SIR JOHN ALCOCK, K.B.E.

The "Bristol" Aeroplanes

STAND 65

International Aircraft Exhibition — Paris.





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Weight empty.		460 *lbs.*	*Wing Area.*	107.8 *sq ft.*
Weight loaded.		683 *lbs.*	*Wing Loading.*	6,34 *lbs. per sq. ft.*
Wing Span	*Top Wing,*	19 *ft* 8 *ins.*	*Overall Length.*	14 *ft.* 11 *ins.*
	Bottom Wing	18 *ft.* 8 *ins.*	*Maximum Height.*	5 *ft.* 9 *ins.*
Chord of Wing	*Top Wing*	3 *ft.* 11 *ins.*	*Petrol Capacity.*	6.5 *gals.*
	Bottom Wing.	2 *ft.* 6 *ins.*	*Landing Speed.*	40 *m.p.h.*

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THE NAVAL ESTIMATES.

The Navy Estimates for the year 1919-1920 were presented to Parliament by command of His Majesty late in the past week. There is naturally little reference to aeronautics in the votes as the Admiralty has at present no responsibility in aerial matters. In Vote 9 there appears an allocation for "Aviation" of £978,100 less an appropriation in aid of £70,000. This vote covers salaries, wages, matériel, etc., in "aviation establishments," but a footnote shows clearly that these sums relate to the construction and maintenance of the airships which have now been handed over to the Air Ministry. Therefore no object will be served by an attempted analysis of the expenditure.

The First Lord's Statement.

The First Lord of the Admiralty made his statement in the House of Commons on Dec. 10th, 1919. Towards the end of his speech he referred to the influence of aviation on the employment of big ships.

The Board of Admiratly are just as well aware of the fact as anybody else that we have immense possibilities before us. Who can say what is going to be the development of the Air Service in the future, and what is to be the effect of the Air Service? I was told to-day that the Air Service is going to be so effective that it will destroy the battleship, which is such a big target. That is the view of one side. I go to a great airman and I say, "I am told that our big battleships are not going to be of any use, because they offer such big targets for bombs which are heaven knows how many tons in weight, and which are to be dropped from the clouds onto the battleships." He said, "Some people will tell you that, but, speaking for the air people, I can say that as fast as they develop that attack we are developing a counter-attack and defence, and we shall have something to say before you abandon your big ship simply because an airship has been devised that is going to threaten you with bombs." There are the two sides to the question. I am taking neither side. We have to-day in His Majesty's Navy some of the most magnificent ships the world has ever seen, wonderful productions, and to destroy these vessels because we are told that the air is going to replace the Navy would be a criminal thing for any Board of Admiralty to do.

He then states that scientific investigation is proceeding and that the powers of aircraft and of the submarine will be gauged from time to time. There we may safely leave the official view for the present. It is not wise to destroy the existing form of a service until the future course of action is clear. Reduce programmes if you will, but that is sufficient. Nothing in the war has proved that the aeroplane can eliminate battleships.

The Debate.

Mr. Lambert opened the Debate and speedily came into collision with the Chairman of Committees as to the propriety of discussing the Air Ministry when the House was in Committee over the Navy Estimates.

The policy of the existence of the Air Ministry could not be dealt with in this Committee as it was a matter requiring legislation.

Mr. Lambert doubted whether or not the great surface ships of the present, such as the "Hood," costing, as it did, £6,000,000, had any future value in view of the possibilities of aircraft and submarines.

He then discussed the position of the great dockyards from a strategical point of view, but without any special reference to aircraft.

The Debate was continued by Rear-Admiral Adair, who has always held pronounced views as to the use of aircraft in naval war, and, in one's own opinion, views which are essentially sound, based, as they are, on strategic principles and the knowledge of psychology, which is the foundation of all good staff work.

Rear-Admiral ADAIR: I say that the Admiralty have been negligent in respect to the Air Force associated with the Navy. I will put it that way to avoid any question of policy.

In my opinion, any personnel working with the Navy as part of an Air Force must primarily be seamen. Aviation is only a means to an end, and that end in the case of an Air Service attached to the Navy is maritime warfare. The efficiency of the Navy, I say, is bound up intimately with its Air Service, and perhaps it would be well if I just mentioned to the Committee what the actual duties are of an Air Force serving with the Navy. They are embarked in ships called carriers, such as the "Argus," which carry aircraft to operate at distances beyond the reach of those which lie at shore bases. Such ships carrying these aircraft can accompany the Fleet, and the aircraft may be sent out as scouts for the Fleet, or they may actually take part in a Fleet action, when it occurs, by the use of bombs or aerial torpedoes, or they may be used with the same weapons against enemy fleets in their own harbours. They are embarked in fighting-ships, battleships, and the larger cruisers, as aids to efficient gunnery. There is the spotter, flying in a small machine, watching the fall of the shot, and there is the fighter, flying in another small machine, who has to protect the spotter from the enemy. The long-range fire of the Navy is absolutely bound up with this service of spotting and the protection of the spotter. They are employed at shore bases—coastal areas, I believe the correct term is—from which they defend the coastal waters against submarines and mines of the enemy, or they can be used from these bases for reconnoitring such distance as is feasible within their range of action, or they can be employed, again, with bombs or with Whitehead torpedoes, to attack enemy ships. In short, their duties are all forms of maritime warfare that can be effective from the air. That sounds rather paradoxical, but that is the actual fact.

Every one of these duties is linked absolutely with the Navy, and they are purely naval matters. They must be under the command and direction of naval officers. The information, for example, which a Commander-in-Chief requires as to the composition, the disposition, the course, and the speed of a Fleet, which has to be brought in, perhaps, by one of these scouts—I ask the House to consider, could any man but a man who has been educated in Fleets bring back intelligible intelligence to that Commander-in-Chief? If they are not properly educated in Fleets prior to their becoming aviators, then they may bring misleading and absolutely dangerous information to their Commander-in-Chief. In my opinion, there can be no question whatever about it that the Naval Air Service must be formed of men who are part and parcel of the Navy, and no amateurs can effectively do the work. Herein lies the first blunder, if I may call it so, of the Admiralty. They started the Royal Naval Air Service as a separate Service, and on no account should they have dissociated the administration of that Service from the Navy itself; it should have been a part of it, and when they allowed the whole of this Service to be turned over to the Air Ministry they made a still greater blunder, because they were turning it over to people who did not appreciate the needs and duties of the Navy, and it was highly probable, therefore, that any progress in naval aviation would not be what it should have been

Let us see for a moment why they turned this Royal Naval Air Service over to the Air Ministry. At the outset of the war aircraft could be numbered, perhaps, by dozens. There were very few firms, and those only small ones, in the country who could produce them. Practically speaking, there were no fighting machines, and the manufacture of these fighting machines had to be done very hurriedly. There was great competition and rivalry between the two Services, and of course friction ensued. Neither party knowing exactly what they wanted, there were constant changes, and each party, the Army or the Navy, was demanding to be served first, and each wanted its own latest invention. All that occurred and led to the amalgamation of the two Forces, the Royal Naval Air Service and the Royal Flying Corps, under an Air Minister. I am not criticising that, but only stating facts. I do not wish to touch on policy, but I say that in future no such difficulties as those will occur. There need be no clash of interests whatever, for the productive capacity of the country now is quite sufficient to meet every service, however distinct it may be. I speak as a manufacturer, and the firm with which I am connected has made every sort of aircraft and engine under the sun. I wish to impress on this Committee that the true lesson learned as regards air service during the war was this—that the duties of the Naval Air Service were very different from those of the land Air Service, required different material, different administration, and a different education for its personnel. What has happened? In a letter that he addressed to the "Times" the other day, the late Under-Secretary for the Air said, "As a consequence of the amalgamation of the Naval and Military Air Force, the Air Force increased to an astonishing degree on the military side." That is all I wish to read, but I wish to supplement that statement, and my supplement is this, that I say emphatically that the amalgamation had a most prejudicial effect.

I will mention a few facts indicating the lack of progress in the Naval Air Service. The first is that no aeroplane specially adapted as part of the equipment of a battleship for this spotting, and the fighting machine accompanying the spotter, has even yet been designed. What has been used has been a makeshift arrangement. Certain obsolete forms of land service aircraft have, I believe, been employed with certain air-bags attached to them for the purpose of alighting on water. A proper machine is absolutely essential and should have been produced long ago. The second item I wish to refer to is this, that little or nothing has been done towards producing an armour-piercing bomb. An armour-piercing bomb is absolutely essential for the attacking of a ship that has a protective armoured deck. In not seeing that such a bomb has been produced the Admiralty have been neglectful. The third item that I refer to is that there is no such thing existing as a really reliable and accurate sight. It stands to reason that when you are aiming on a submarine from 5,000 ft. or 10,000 ft. in the air you must have a very accurate sight, and, owing to the movement of the machine, it is necessary to have some such thing as a gyroscopically controlled one Two years ago such a sight was nearing perfection, and yet the Navy has not got it yet. The fourth item in which failure to make progress has occurred is this. Some five years ago there was actually fired from a naval aeroplane, or it might have been a seaplane, a Whitehead torpedo—successfully discharged from a craft in the air; but only this year, five years later, an attack has been carried out by such a craft with such a torpedo on a fleet with success. I say that if the Admiralty had been doing their duty they would have had all these items completed long ago; and I would go so far as to say this, that, had the progress of the Naval Air Service been left in the hands of the Navy, the German fleet might have been destroyed in Wilhelmshaven long before the Armistice. That is rather a severe charge to make, but I think it is one that is justifiable.

These views coincide with those expounded by the Editor of this sheet in that "root and branch" manner which is as prolific in the production of friends as of enemies. He has emphasised the necessity of naval aircraft being manned by naval officers of experience and he has, with unpleasant accuracy, described the negligence of the Admiralty in matters closely concerning the Royal Naval Air Service. There is no need for further comment than to express complete agreement with Admiral Adair.

Major-General Seely, released from the cares of office, spoke in his usual manner, and said once again those things which he has so often reiterated before. After his customary defence of the separate Air Force principle he stated an imaginary case as follows. Should the First Lord desire additional aircraft he must address his "appeals to the right hon. gentleman the Member for Dundee (Mr. Churchill), and the right hon. gentleman the Member for Dundee says, "I am not in a position to give you these things which you so vitally require for the safety of the Fleet and its efficient conduct." "Why?" asks the right hon. gentleman. "Because I consider they are required for the Army," is the reply. "And why do you so consider?" Because I interviewed myself five minutes ago, and so I decided." That is really opera bouffe; it is not Government."

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Major-General Seely's style is well known. It is a mass of superlatives plausibly arranged but based on little that is solid. In his speech all he has succeeded in saying is that he does not approve of any proposal to abolish the Air Ministry, and that it is absurd to place the War Office and Air Ministry under the same Statesman.

He was followed by Viscount Curzon, who, always devoted to the Navy, and prevented joining that Service in early youth owing to ill-health, served with distinction in the "Queen Elizabeth" during nearly the entire war.

Viscount CURZON: . . . The Air Services are what I would next deal with. I feel some considerable difficulty in alluding to this matter at all, but I should like to say this much, that I do know there is a great deal of anxiety about it on the part of the Navy. I have had the opportunity of getting to know something about the matter, and it has been put to me that it is obviously very difficult for the Commander-in-Chief of the Grand Fleet to have to communicate at one and the same time with both the Admiralty and the Air Ministry upon various subjects connected, say, with the aviation services of the Atlantic Fleet I suggest to the right hon. gentleman that this is rather a difficult situation, and one which does not entirely make for efficiency.

Major-General Sir John Davidson, who was Director of Operations under Lord Haig in France, spoke later on the necessity for the creation of a Joint Imperial General Staff in order to co-ordinate the work of the War Office, Air Ministry and Admiralty.

Captain H. W. Benn was the next to make any reference to aerial matters. He said :—

. . . . My view, and I am sure it is the view which naval officers hold, is that the aerial arm has been as much a part of the Navy as the submarine, that there is a portion of the Air Service as regards the Navy which is analogous to the submarine service, and that it should be manned by men with naval experience, who would do their time in the air work, and when they are too old to fly would revert to the Navy in the same manner that the submarine officers revert to the Service ship. These men would be of inestimable value to the Service, having had air training and experience in flying. There is another view of the subject, and that is that the Admiralty have produced the submarine service, a child of their own, and encouraged it in every way, and it has benefited by the traditions of the Naval Service. In a similar way, if the Navy were responsible for their particular section of the Air Service, that section would have the naval training and the naval experience which is necessary for sea warfare. I do not want it to be understood that I am suggesting the abolition of the Air Ministry, or any reduction or supplanting of the Independent Air Service That has been laid down as a policy of this House, and is not one which is open to question. I do not think that anybody either in the Army or the Navy would suggest that there should not be an independent Air Service. It is only that there are certain branches of the Service which, in my opinion, should be manned by naval men.

Lieut-Commander Kenworthy referred briefly to the relinquishment of airship building in this country, but he was more troubled by the number of motor cars in the Navy.

In the course of a general reply, Dr. Macnamara, Parliamentary Secretary to the Board of Admiralty, said :—

. . . As regards the interesting comments of my hon and gallant friend the Member for the Shettleston Division (Rear-Admiral Adair), my right hon. friend the Member for South Molton (Mr. Lambert), my right hon. and gallant friend the Member for Ilkeston (Major-General Seely), and my hon. and gallant friend the Member for Greenwich (Captain Hamilton Benn), in regard to the question of the relations between the Navy of the future and operations in the air, that, obviously, is a matter of high policy. It is a question for the Board of Admiralty in the first instance, and then for the Cabinet If I do not discuss that now, my hon. and right hon. friends will see that it is a matter for a higher authority than I possess, but that, again, will be a matter which, as I have said, will be referred to those responsible for its consideration.

At the end of the general discussion there was a further intervention by Major-General Seely to which the First Lord replied.

Mr. LONG: I have no hesitation whatever in answering my right hon. friend's question, as far as it is possible for me to do so, although I might take refuge, if I chose, in the very ordinary Parliamentary reply that the whole of his question is hypothetical, because really it centres in his conclusion, what course shall I take as First Lord of the Admiralty if and when I find that the present arrangement does not conduce to the efficiency of the Navy? My right hon. friend and I are too old friends to quarrel, but if I wanted to quarrel I might say he must leave it to me to say what course I take when I do not feel it consistent with my honour and credit to remain a member of the Government. That is really the answer to his question. When he asks me about the present situation, that is a totally different question, and, as we have discovered to-night, it is extraordinarily difficult, if not impossible, to answer it within the very narrow limits which we are allowed in this Debate, owing to the fact that we have to accept the existing condition of things under which the Air Board is a Ministry by itself. My right hon. friend is an enthusiastic supporter of a separate air administration. My hon. and gallant friend (Rear-Admiral Adair) does not share my right hon. friend's views. He does not approve of the existing state of things, but he still more disapproves of a separate Air Ministry, and wants a reversion to the original condition which existed before the Air Minister was appointed.

Before the Air Board was appointed the Board of Admiralty and the War Office were each responsible for their respective air branches. Owing to the very unsatisfactory state of things which arose during the war public opinion became very excited, and the opinion of this House was not only unanimous, it was more than that. No Government could have resisted the pressure of Parliament to get rid of this dual control, by the two military Departments, and to substitute a separate Air Ministry. Therefore, it would be kicking against the pricks to attempt, even if you believe in the old system, to go back to it now. Parliament deliberately arrived at this conclusion. I was a member of the Government at the time, and I know how great the pressure was. The Air Department was created, and up to the constitution of the present Government it was under a separate head. The Air Department is now under a Secretary of State, who is also Secretary of State for War My right hon. friend (General Seely) thereupon rehearses to the Committee an imaginary conversation between myself and the head of the Air Board I was unable to recognise either myself or the head of the Air Board in the conversation which was rehearsed with artistic skill. He asks me, "What are you going to do when the Secretary of State for War and the Secretary of State for Air, Mr. Jekyll and Mr. Hyde, this dual political personality, tells you that, having discussed the matter with himself, he cannot give you at the Admiralty what you want for the air, because he has already given it to himself at the War Office?" I do not want to take refuge in the hypothetical, but I think I may pray for mercy and say that we have plenty of other difficulties to deal with. We have had a most interesting debate. Everybody who has spoken has criticised the Admiralty and the First Lord, and has attacked us and abused us [HON. MEMBERS: "No!"] Well, at any rate, the majority have. Ninety-eight per cent. have, and the other 2 per cent. that have praised us have done it more in the sense of favours to come than of favours received. At the end of the debate, with my bruised ribs, and in my exhausted condition, I find myself being asked what I shall do in a hypothetical situation, when the Secretary of State for War says that he has consulted the Secretary of State for Air, and the Secretary of State for Air cannot give to the Secretary of State for War all that he wants, and therefore the Secretary of State for War cannot give the First Lord of the Admiralty all that he wants. That state of things has not yet arisen. As a matter of fact, the chief of the naval staff, who is the First Sea Lord, and the chief of the air staff have been in constant communication. I do not say for a moment that I am satisfied with what the Air Board has done, but I have no reason to believe that this is because the Air Board has surrendered itself to the War Office. I am not at all sure that it is not the case that the Air Board take a different view of what we want than we take ourselves. It may be that my combat in the future will not be with the Secretary of State for War, but with the Air Board, who may take a different view from what we take of naval requirements. All I can say is that when the moment arrives when I find—if I am still First Lord of the Admiralty—that the Navy suffers, the first thing I shall have to do will be to discover whether the culprit is the Air Board or the War Office, and the second thing will be to decide, having found the culprit, the course to take in regard to my own position. I do not think I ought to be asked to state in advance what course I should take. My right hon. and gallant friend has taken his own course. He has, in accordance with a long and honourable Parliamentary position, resigned the office he held because he felt that he could no longer serve the country in that capacity. He may rest assured that I am not likely to hold my office one moment longer than I feel I can hold it consistent with my duty to my country.

THE AIR ESTIMATES.

The "Air Estimates of Effective and Non-Effective Services for the Year 1919-1920" were debated in Committee by the House of Commons on Dec. 15th and 16th. As in this year analysis of the Air Estimates would be useless in view of the rapid changes brought about by demobilisation the following abstract is published for information :—

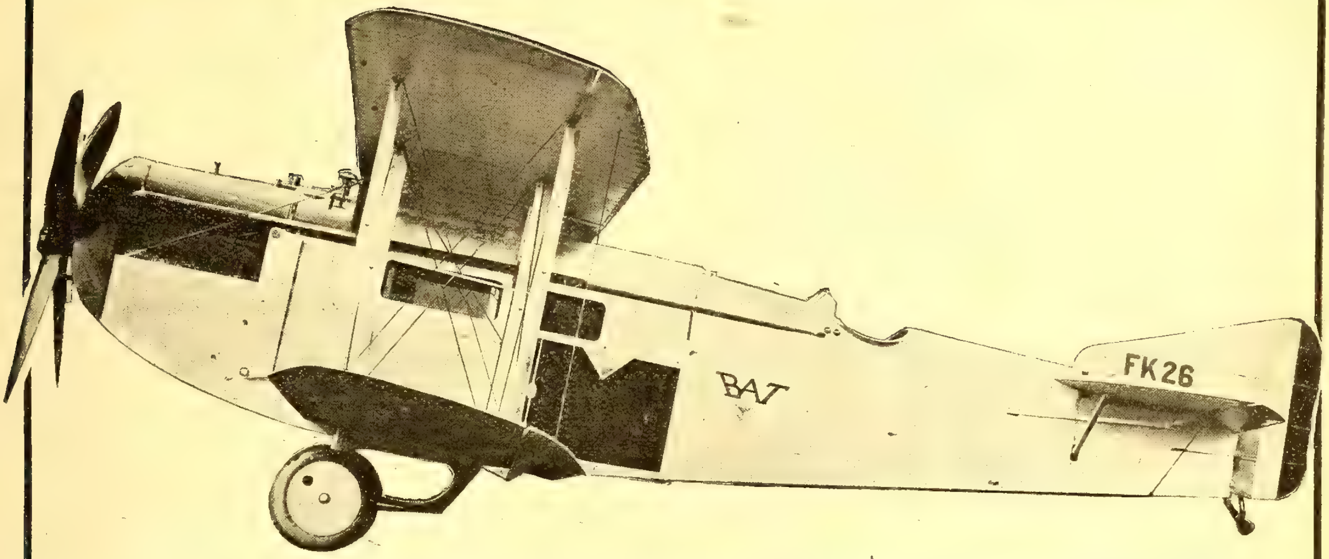
ABSTRACT OF AIR ESTIMATES, 1919-20.

Pp.	Votes. Nos.				Total Numbers
		I.—NUMBERS:			
3	A	Total Number of Officers and Men on the Establishment of the Royal Air Force, exclusive of those serving in India			(a) 150,000
		II.—EFFECTIVE SERVICES	Gross Estimate £	Appropriations in aid £	Net Estimate £
5	1	Pay, etc., of the Air Force	21,501,000	450,000	21,051,000
8	2	Quartering, Stores (except Technical), Supplies Animals and Transport ...	6,712,000	609,000	6,103,000
10	3	Technical and Warlike Stores	19,867,850	545,000	19,322,850
12	4	Works, Buildings and Lands	6,801,000	399,000	6,402,000
15	5	Air Ministry	692,100	100	692,000
22	6	Miscellaneous Effective Services	204,000	1,000	203,000
		Total Effective Services......	55,777,950	2,004,100	53,773,850
		III.—NON-EFFECTIVE SERVICES.			
24	7	Half Pay, Pensions, and other Non-Effective Services ..	258,000	1,000	257,000
		Total Effective and Non Effective Services	56,035,950	2,005,100	54,030,850

(a) Number voted by the House of Commons on March 14th, 1919.

It is noted on page 3 of the Estimates that the maximum number of all ranks serving at home and abroad (excluding those in India) is 150,000. This number will be reduced by March 31st, 1920, to 35,000.

The debate was opened by Major-General Seely, who, with a note of bitterness, usually absent from his somewhat rococo speeches, enlarged again on his favourite theme of the sin done to good government by the linking of the Air Ministry and War Office under one Secretary of State. It seemed to listeners as he proceeded that his anger was directed more at the personality of the combined Secretary of State than at the abstract principle, though the latter literally formed the excuse. He appealed to the Committee to support his view that no one man, however hardworking he might be, could give adequate time to both Ministries. His second point was "that it is grossly unfair to the Admiralty," reiterating the arguments used by him in his speech on the



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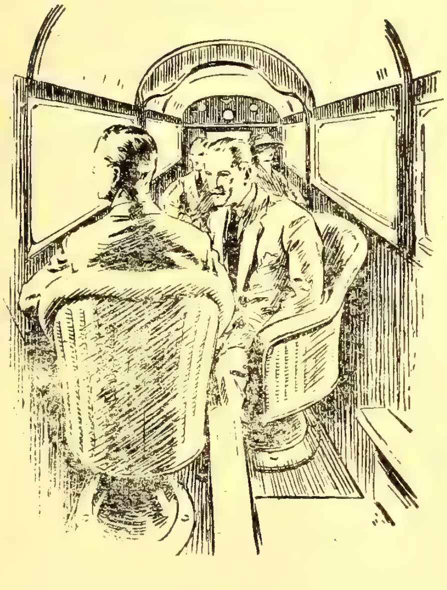


An impression of the interior of the cabin of the F.K.26.

Navy Estimates, and quoting the views of Lord Fisher as to the revolutionary effect of air power on future naval effort. Therefore, the Admiralty must be better treated in aerial matters.

He could see no reason for the dual appointment save economy in that both Departments share the expense of the salary due to the Secretary of State, which, though his work is doubled, remains at the standard rate of £5,000 a year.

He repeated his statement that Mr. Churchill could only give one-tenth of his time to the Air Ministry, quoting, curiously, as support, the War Office statement "that they cannot answer their letters." Here Mr. Churchill intervened: "I never said I was not able to answer my letters."

General Seely: "No; but you never answered them."

Mr. Churchill: "That is very unjust."

Having thus exposed the futility and the personal nature of his grievances, he repeated his entire gamut of views and sat down.

Mr. Bonar Law, as Leader of the House, here made a statement in explanation of the position as the Secretary of State for War could hardly be expected to justify a situation for which he was not personally responsible

He rapidly came to the War Office letter question, and said that some people seemed to think that detail work was the concern of Secretaries of State.

"The right hon. Gentleman even carried that so far as to imply that because letters are not answered promptly by the War Office that therefore the Secretary of State must have more to do than he can do That really had nothing whatever to do with the case. I should say at once if the Secretary of State for War attempted to answer the letters in detail which came to the War Office that would be the best proof that he was unfit for his job and should be removed from it"

In regard to Major-General Seely's views as to the unworkable nature of the present arrangement, he said:—

"I would venture to say to my right hon. Friend and the Committee—and I think I can say it to him without any offence, and I am sure that in a sense he realises his position—I do believe that system has worked worse with him than would be at least possible with some who had not held so distinguished political posts in the past, and who had not his distinguished record in the War. I am afraid that throughout my right hon. Friend did not accept the position that he was only an Under-Secretary, to carry out the duties of the Secretary of State for Air."

There was no intention of doing away with the independence of the Air Ministry.

As to the powers of one man to do the work required by the two Departments, he indicated in many words that Mr. Churchill possessed sufficient energy and skill to undertake all that was required of him in these matters. He pointed out the absurdity of assuming that economy in the matter of the salary could have anything to do with the appointment.

In his view the two most important things at the moment in connection with the fighting Services of the Crown are the demobilisation and the arrangement of the Air Force in relation of the Army. It has to be decided where squadrons and other air units are necessary in the view of the Army, hence it is desirable that the ultimate departmental decision should be in the hands of one man. No such question is urgent in so far as the Navy is concerned. And with this general dissertation he concluded.

Lt.-Col. Moore-Brabazon Speaks.

Lieut.-Colonel Moore-Brabazon next caught the Speaker's eye. Referring to the Trenchard Memorandum [published in these pages last week] which he regarded as the most interesting aeronautical document ever put before the House, he said:—

"I see one or two lines in this Report which disturb me, and if I may I will read them:

"'In addition, there will be a small part of it (the Air Force) specially trained for work with the Navy and a small part specially trained for work with the Army, these two small portions probably becoming in the future an arm of the older Service.'

"Does that foreshadow a return to a small Royal Flying Corps and a small Royal Naval Air Service over and above a separate Air Force?"

To which Mr. Churchill promptly answered "No."

This satisfied Lieut.-Colonel Moore-Brabazon for the moment, but he asked "whether the cost of machines for these two separate Services will be borne on the votes of the other Service and not on the Air Vote?"

To this the reply was that the Air Force would pay.

He said that many obstacles hindered the Army and the Navy in their operations (such as wire netting, trenches, mines and submarines), but the Air Force had powers to which there was no answer. Aeroplanes could fly in a fog to a place hundreds of miles away without being seen. [One thinks that in referring to the absence of an answer the speaker revealed his lack of knowledge of anti-aircraft defence and its powers.]

Future wars would only be won by the "ultimate industrial resources of a country." The enemy's first object would be to attack the industrial arm of the State which in England is based on Birmingham, and in Scotland on Glasgow. Only one Force could defend it—the Air Force. [It is a little hard to see why the aerial arms of the two older Services working in co-operation with the other arms of their respective Services should not be quite as successful in defence. The gun and the searchlight will not cease to share the responsibilities of A.A. defence with aircraft.—Ed.]

The Advisory Committee on Civil Aviation.

From war he turned to peace:—

"Now I want to say a word on civil aviation. I had the honour of serving on that Advisory Committee which has given a Report. First of all, the supremacy which this country has got to in the air is not entirely due to the military. That seems to be sometimes forgotten. I quite admit that there are many manufacturers who have become very wealthy, but that is not all they want, and I think, from the point of view of rewards, we have been very lax in looking after those brains and those organisers which, quite apart from any military point of view, have put us on top. I heard someone say the other day that if Wilbur Wright had been an Englishman he might have got an O.B.E. The Advisory Committee on Imperial Air Routes had an extraordinarily difficult task, because if there ever was anything in the air, so to speak, it was civil aviation. The whole question was the most nebulous I have ever approached, and nobody knew anything about it whatever. There were no figures, and what experience there was was only based on a military basis, and we had very little to go on at all. One very leading light was asked by us what was holding back civil aviation, and he replied, with very great confidence, 'Your Committee.' . . .

"If anybody interested in the air has read the Report furnished by the Committee, I hope it will be noticed that really the demands are very moderate indeed. We took into consideration the financial condition of the country.

"What was at the back of our minds was how to avoid building up a goodwill against the State. We have seen necessities of life, like the telephones, started by private enterprise and then pushed on to State, the State having to pay for the goodwill created. What was at the back of our minds was to arrange some scheme whereby the State at some time could take control of all aviation throughout the world without having to pay for vested interests. The recommendation was that all aerodromes should be State-owned."

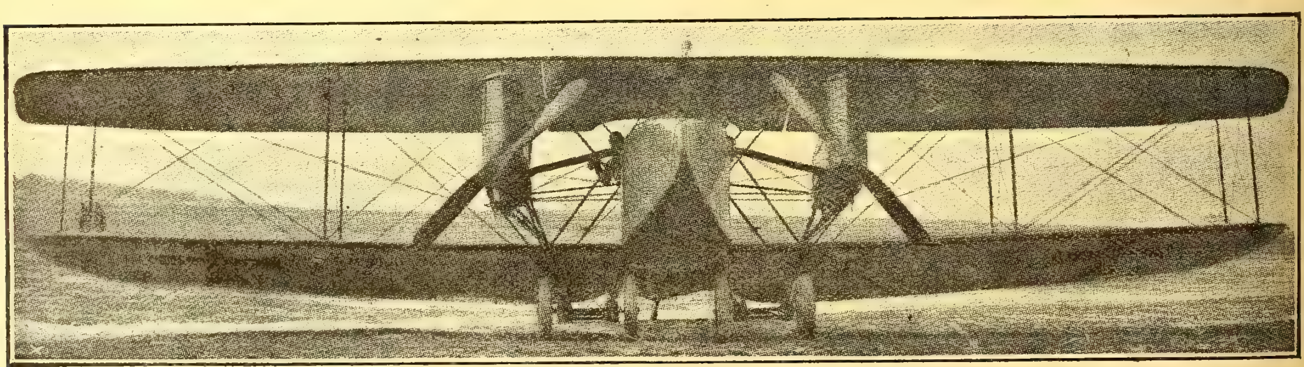
And so, after asking the Secretary of State to talk of these matters, he ceased to address the Committee.

Mr. Lambert protested against the joint secretaryship in fewer words but with greater simplicity than General Seely. Leaving this argument he quoted Lord Fisher and Sir Percy Scott on the approaching extinction of the surface ship unless it receives adequate aerial protection. Hence he argued the Air Ministry should be under the Admiralty and not under the War Office. [Which it is not in any case.—Ed.]

He protested against the expenditure on a cadet school at Cranwell which must, he thought, cost £1,000,000 at least in construction work alone. Why not use part of Osborne and Dartmouth, which he was sure would not be filled completely by Naval cadets in the future.

The training of officers in the R.A.F. in navigation, engineering and wireless was, he thought, very similar to that common in the Navy. An additional reason why Air Force officers should be trained in Naval establishments. Similar considerations affected the training of boys in the R.A.F.

Mr. Oswald Mosley, whose claim to be the "Child in the House" has been destroyed by Mr. Harmsworth, protested against the dual Secretaryship and appealed for a Minister of



An A.E.G. Bombing Biplane used occasionally on the German Fighting Fronts.

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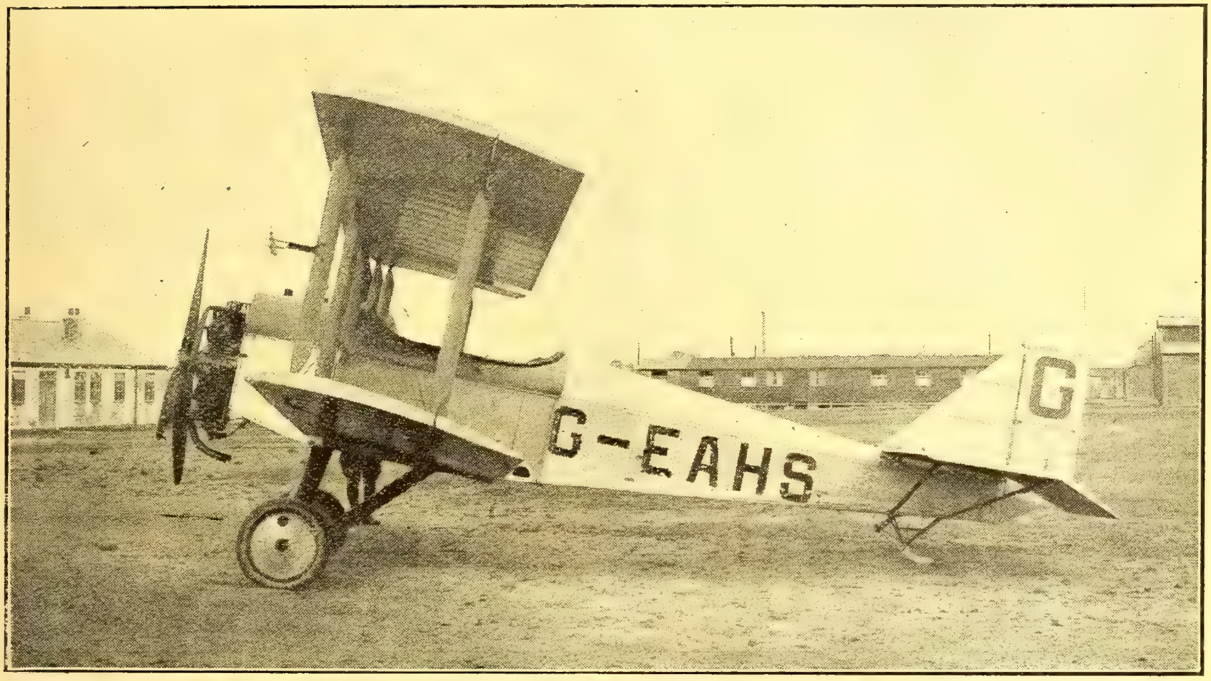

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Defence. Major Glyn, in the course of an interesting but somewhat rambling speech, said that anti-aircraft defence was highly important in view of the intensive bombing which would be the certain prelude of any future war. Consequently the Air Force should be developed as a separate force. "I think," he said, "the greatest point of all in maintaining the Air Force you are maintaining a great prestige. Those pilots who fell on British service have laid a tradition which is the envy of the world." [Yet it was a naval and military tradition which inspired them, for the Air Force had only seven months of warlike existence.—Ed]

In further reference to anti-aircraft defences, he said :—

"When the war came to an end we had eleven squadrons of aeroplanes with the necessary landing grounds and alighting stations in the vicinity of London. We had a special telephone service and listening posts, and two or three barrages of coastal searchlights We also had 280 anti-aircraft guns situated at suitable points, and, incidentally, I may mention that most of those points have been dug up, and who is to know where they were? I suggest that, at any rate, the concrete foundations might be retained and a cheap post put up announcing, 'From this place guns were fired to destroy the aeroplanes of the enemy.' Altogether we had 30,000 men on the establishment. Of course, you cannot depend altogether on anti-aircraft gunfire, and you must meet like with like."

In regard to civil aviation he could not understand why the Peace terms had left Germany in possession of about 8,000 aeroplanes. The Germans "have now 7,000 miles of aerial routes with alighting arrangements and definite transport services." Should we not, in view of this, do everything we can foster civil and military aviation? Was £15,000,000 enough in a normal year to spend on these matters?"

Rear-Admiral Adair continued the debate. In general his remarks were similar to those in his speech in the debate on the Naval Estimates. He advocated strongly the formation of a Naval Air Service and quoted Sir Hugh Trenchard in favour of aerial arms to the older Services. But thought it desirable to retain in addition a separate Air Force.

The surface sea-borne ship would, in his view, never be replaced by aircraft in the economic sense. In the military sense he thought that ships would improve contemporaneously with the development of aircraft. The torpedo was to abolish surface ships forty years ago. It has not yet done so. In fact a cruiser, fitted with anti-torpedo blisters, was torpedoed and improved its speed immediately.

The destroyer, or ships of destroyer size, capable of 70 miles on hour on the water and then spreading wings and passing through the air at 150 miles an hour was a certainty of the future, though perhaps not in his lifetime.

The one essential in the future was that the Admiralty should be responsible for Naval aviation. The Air Ministry was not competent to deal with such matters, not from general inefficiency but from lack of detailed knowledge.

Capt. Wedgwood Benn protested against any division of the Air Force. He did not agree that the Navy required a special type of aeroplane. It was not necessary to man seaplanes with seamen. The aviator's knowledge was of a special class and did not coincide with naval knowledge even on similar subjects. The wireless equipment was different, there was the art of flying and the special problems of the defence of the machine.

The Air Ministry had stated that there was no intention of dividing the Force, but he was a little uneasy at the attitude of the Admiralty because the First Lord in his speech in the Navy Estimates had not definitely stated that the Navy would not have an Air Service of its own. In regard to the supply of officers he did not wish the main supply to come from the public schools, which he assumed was the intention. Mr. Churchill interposed to say that there would be promotion from the ranks.

Captain Benn continued :—

"I do not think promotion from the ranks meets the case. My experience is that people promoted from the ranks never have the status of the officers who have entered direct. They are usually pushed into administrative or other jobs. At any rate, that is my view, and I think that the field should be absolutely open for boys to enter exactly on a parity from all social classes. The history of the War has shown that, although all classes contributed very nobly, by no means all the most brilliant pilots have been chosen from the class of boys to whom the whole thing would be restricted if such a plan were adopted."

The scientific side of the pilots' work should be developed. The present exaltation of the "stunt" pilot was bad for aviation. [Here one thinks that all are in agreement.—Ed.]

Research ought not to be starved. Civil aviation should be encouraged, as even from the military point of view it must not be forgotten that the larger machines used in war for bombing and the transport of relatively large numbers of men would be the outcome of the civilian type.

The Secretary of State for Air then rose to make his statement, which is given here in compressed form.

Mr. CHURCHILL : This Debate has been both peculiar and agreeable It has been peculiar from the fact that it has taken a very different course from that on which it was originally launched by my right hon. and gallant Friend who opened it, and from the fact that out of, I think, seven speakers, five—I am not sure I should not be right in saying six—have all propounded different schemes for the location of the Air Force in our general defensive organisation, or for the general organisation of our defensive Services. First of all there was my right hon. and gallant Friend, whose policy is perfectly clear. He wishes to take the Air Force away from the Army. But there sat beside him on the bench the right hon. Gentleman the Member for South Molton (Mr. Lambert), who uprose and employed an argument of great vigour to show that it should be taken away from the Army only to be put under the Navy—thereby encountering my right hon. and gallant Friend on all his arguments as to the impossibility of one man doing two jobs, and of placing the Air Force in helotage to some other more powerful Service. Then we had the gallant Admiral the Member for the Shettleston Division of Glasgow, whose idea is that the Air Force should be split into three—that there should be three separate Air Forces, one for the Army, one independent, and one Naval Air Force—a proposal for which he was very properly and soundly rebuked by the hon. and gallant Gentleman (Captain W. Benn), who spoke last. We have had, too, a very interesting and suggestive speech from the hon .and gallant Member for Stirling (Major Glyn), who, as I gathered from his statement, is in favour of the general organisation of the three forces in the ambit of one single Ministry of Defence, supported by a Joint Imperial Staff. Amid all these divergent points of view, so powerfully argued, so ingeniously framed, and so eloquently expressed, I seem to have escaped from the direct pursuit which my right hon. and gallant Friend had intended to set upon my heels. That is why I say the Debate, as well as being peculiar, has been agreeable

If I do not immediately embark upon an examination of these elaborate questions of government of the various defensive forces, I hope that those who have taken part in the discussion will not think it is because I do not consider them important and interesting, but for the moment I feel it to be my duty to recall the Committee to some of the more immediately practical issues and questions with which, in Committee of Supply, we have to deal. First of all I would like to refer to the financial aspect, because we have heard a great deal of it at one time or other in the Session, and it is surprising that it should never have been mentioned at all during the course of this Debate.

In March, Air Estimates were presented of approximately £66,500,000, and the present Estimate is for £54,000,000, so that there is an apparent reduction of £12,500,000. I say "apparent" advisedly, because £11,250,000 out of those £12,500,000 are transferred bodily from the charges of the Air Ministry to those of the Ministry of Munitions, and the actual net saving to the public on the new Estimates over the old is only £1,250,000. I am very anxious that the House should clearly understand exactly what the position is, and should not think that we are in any way trying to mislead them as to the actual financial position. This £150,000,000 would have been greater by £2,000,000 if the airships had remained on the Admiralty vote. We have had put on our charge £2,000,000 for airships which otherwise would have figured on the Admiralty Vote. Therefore the total net actual saving on the Air Estimates as now presented is £3,250,000. To this may be added a further almost certain saving on the Ministry of Munitions Vote through not going on with contracts instead of taking delivery of machines. That is to say that owing to the reduction in the demand we are wiping out contracts by compensation instead of by taking delivery, as was done the first few months after the Armistice. It is probable that the reduction will at least amount to £3,000,000, and it may be more; so that the total benefit to the Exchequer is in the neighbourhood of £6,250,000, to which may be added the £400,000 which my right hon. Friend was able to secure by his judicious sale of one of our airships to the United States, and possibly by other sales which are in contemplation and which were not foreseen when the Estimates were originally introduced. Therefore the saving is not £12,500,000, but the public may consider it is better off by the changes which have taken place by something between £6,000,000 and £7,000,000.

These Estimates which are now laid for the Army and for the Air Force are not the Estimates for next year. They are the Estimates for last year, which ought to have been presented in March. It was not possible to prepare them, and I promised that both Estimates should be laid before the end of the year. I am doing this in fulfilment of my pledge. But, of course, we are mates will be introduced. By the end of February or the beginning of March whoever represents these Departments will lay the new Estimates before the House, and there will be a long series of opportunities of Debate and discussion on all matters connected with Air and Army policy. I shall reserve till then the task of making a full statement on the Army. . . .

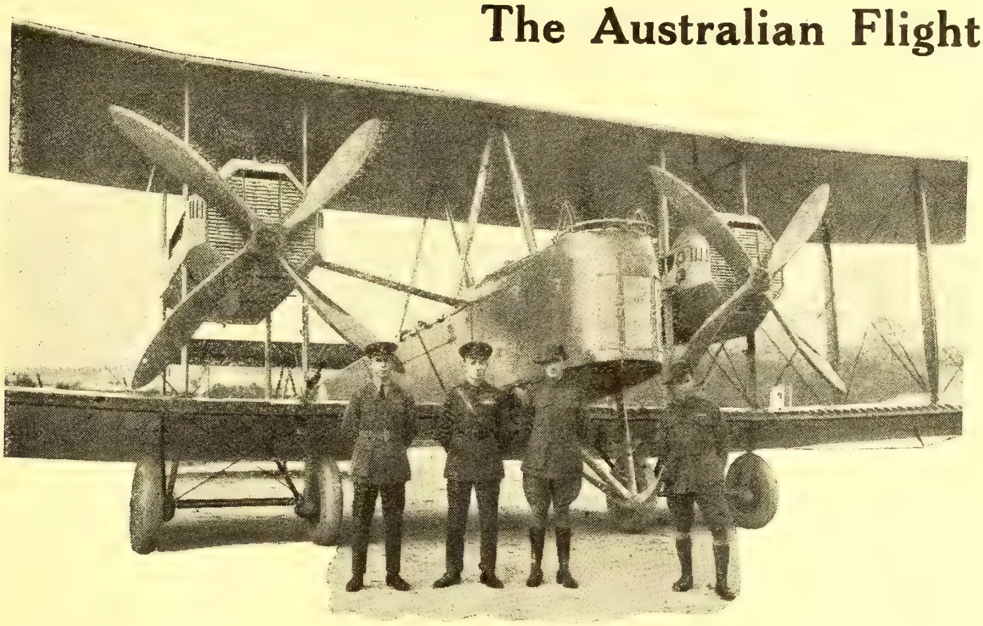
The Estimates of 1918-19 for the Air aggregated £370,000,000, including the Vote for the Ministry of Munitions for aircraft. In 1919-20 they have fallen to £54,000,000, and the limit which the Cabinet has approved for the framing of the Air Force Estimate next year is approximately £15,000,000, so that, whatever else may be said, a very great reduction is being effected in the scale of our expenditure.

But this scheme which has been prepared by the Chief of the Air Staff, working for a long period of time in collaboration with some of the other able officers who under his leadership rose to eminence in the War, has been commented upon with favour by practically every hon. Member who has spoken to-day.

I hope the Committee will not underrate the very considerable merit of the achievement accomplished in elaborating that scheme. During the present year the Air Force has had to be reduced from an enormous war organisation, rapidly expanded in every direction, down to almost nothing, and a modest, compact, permanent peace-time Air Force is being erected out of and upon its ruins. Whereas the Army and the Navy both had permanent pre-war structures to fall back upon and reduce down to, and were strongly organised and established on that basis, the Air Force had nothing at all except its emergency war organisation. At the same time a double element of uncertainty was playing over the whole field, namely, uncertainty as to the rate at which the German and Turkish situations would allow demobilisation to be carried out, and, secondly, uncertainty as to how much money would be allocated for the permanent post-war Air Force. It was inevitable during this period of arrest, of dissolution, of uncertainty, and of reconstruction, that everyone should feel disquieted and uncomfortable. The Air Ministry had not only to work out plans for the future in all their detailed complexity, but they had to have two or three sets of alternative plans carried forward simultaneously through all their variations and complications, so as to be ready to come forward with a complete scheme at an early date, in accordance with whatever scale of Air Force was ultimately sanctioned by the Cabinet. I confided this task to Air-Marshal Trenchard, and with his staff he has been engaged during the last three or four months on its execution. Early in October the Cabinet definitely approved a permanent organisation for the Royal Air Force on a scale of approximately £15,000,000 a year, of which the Indian charges will be borne by India. This organisation has now been elaborated in full detail, and every move in demobilisation, the transfer of stores, surrender of aerodromes, etc., has for some time past been made in direct relation thereto. The full organisation will, of course, be laid before the House when the Air Estimates for next year are produced. But the central principle which has always been followed throughout this year has been the maintenance of the independent status and identity of the Royal Air Force.

(*To be continued.*)

The Australian Flight



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THE AIR FORCE.

By the courtesy of the Secretary of the United Service Institution I am permitted to publish a précis of a lecture delivered on Dec. 3rd by Air Commodore Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C.

The title is a little misleading as the lecturer dealt mainly with the problems and the material of flying.

He explained at the opening of the lecture the principal conditions affecting flight by human beings. The influence of wind on the pilot's progress and his dilemma if he does not know its strength and cannot see the ground are described. "I might mention that wind is always a disadvantage to an aeroplane if one wants to get to a place and come back again."

The next point to which attention was given was the effect on aircraft of the decrease in air pressure as the altitude increases. At 15,000 ft., for instance, "the air pressure is just half what it is on the ground." Hence the aeroplane has to be flown at a greater angle owing to reduced support, and as the resistance is reduced the speed will be greater (other things being equal, which they are not!). The engine deprived of the weight of air loses power. One well-known engine that gives 360 h.p. on the ground, only gives 200 h.p. at 15,000 ft. The propeller, on the other hand, rotates with greater speed owing to the rarefication of the air. "The net result of all these is decrease of performance with altitude." Commodore Brooke-Popham considers that "the only means of getting over this appears to be to use a propeller having some method of altering the pitch."

From the effects of altitude on the aeroplane the lecturer turned to the trials of aviators at great heights. "A temperature of minus 20 deg. Fahr., which is not unusual, is, I am informed, the average winter temperature at the South Pole. At this temperature any metal that is touched with the bare skin will have a serious effect. I remember an observer who for some reason or other touched his gun with his mouth, and left the greater portion of his lips sticking to it." The introduction of electrically heated clothing reduced greatly the discomforts of flying at great heights.

All of this is elementary and has little interest to those experienced in aeronautics. The interest began when he dealt more closely with the aeroplane in war and spoke of the advance made in the design, supply, and fighting efficiency of aircraft.

In August, 1914, there existed 272 aeroplanes in the R.F.C. and R.N.A.S. Of these, in his opinion, scarcely 90 were fit for service. The R.F.C. took with it to France on August 13th "thirty-two machines in units and a further twelve in reserve," leaving in England sixteen war machines which were sent over later. Thus with the exception of training machines and some others of which the only attraction was the charm of antiquity, England was left without aircraft. He notes as an interesting point that the engines in the machines sent to France were all of foreign design and manufacture.

When hostilities ceased the factories of England were producing ninety aeroplanes a day, fifty per cent. of which were of English design and all but a few were of English manufacture.

"During the last eighteen months of the war, the average wastage [of aeroplanes] was 51 per cent. per month, i.e., all the machines with squadrons in France had to be replaced once every two months, or six times a year. In other words, each machine only lasted an average of sixty days, which would only mean a little over sixty hours flying per machine."

The wastage due directly to enemy action never at any time reached 25 per cent., even if to this were added a proportion of the missing machines it is doubtful if the wastage due to enemy action ever amounted to more than a third of the total losses.

The lecturer then dealt with some of the problems connected with aerial navigation. He described the many troubles which affect the aeroplane compass and the methods by which these troubles were overcome. In his view, and in that of all wise pilots, good instruments are absolutely essential if one is to fly through clouds with reasonable safety.

One method of navigating aircraft when the land is invisible is by wireless. It is now quite a simple matter to find the direction from which a wireless signal is being sent, by means of a rotating coil. Consequently if the direction of two sending stations is known, it is possible to fix one's position by an intersection.

He emphasised the high value of wireless, both telegraph and telephone, in the development of aviation, and said that messages had been sent by wireless telephone from an aeroplane from over 100 miles. At the time of the armistice there were 520 wireless officers and 6,200 wireless other ranks in the Air Force in France alone.

A description was then given of bombing raids carried out by aeroplanes over German territory and the moral effect caused thereby.

The lecturer was under no illusion as to the great value of torpedo-dropping aeroplanes for future Naval warfare. "The normal range at which torpedos are dropped from aircraft is about 600 yards, and at this range a trained pilot will make a practical certainty of hitting a destroyer." A certain degree of defence for the aeroplane against the ships' guns can be provided by a smoke screen formed by convoying aircraft.

In reference to seaplanes and aeroplanes for use over the sea he described the flotation gear experiments carried out at the Isle of Grain, of which full details were given in a recent series of articles by Captain Sayers which appeared in this paper.

At the conclusion of his lecture he gave a few figures as to the fighting in France, which, being of general interest, are produced here.

"The best day we ever had as regards bringing down enemy aircraft was on October 30th, 1918, or to be strictly accurate, 4 p.m., the 29th to 4 p.m. the 30th. On that day we did in 70 enemy machines, and they were all properly crashed, not merely driven down out of control. Our casualties that day were 17 aeroplanes missing.

"With regard to bombing, our best day's work was in April, 1918, 4 p.m. 11th to 4 p.m. 12th, when we dropped 43¾ tons.

"As regards photographs, our best day's work was May 3rd, 1918, when 4,090 new photographs were taken.

"It may interest you to know that the total number of prints of aircraft photographs issued in France during 1918, up to the armistice, was over 6,000,000, the great majority of these being produced by the Air Force themselves. In that connection it might be interesting to note the consumption of a certain chemical, known as hybo-sulphite of soda. Ordinarily one buys it by the ounce. Our total consumption during the war amounted to 120 tons.

I am not quite certain as to the best day for the number of hours flown, but I know that on April 12th over 3,100 hours total flying was put in, which, when converted into miles, means a great deal more than sufficient to go from here to the moon."

THE FLIGHT TO AUSTRALIA COMPETITION.

The complete telegraphic diary of Capt. Ross Smith has now come to hand and is as follows:—

Nov. 12th.—The Vickers-Vimy left Hounslow at 9.10 a.m. Weather misty as far as Lympne, but Channel clear. Encountered heavy cloud of snow at Etaples, and climbed to 8,000 ft. Flew by compass course. Next saw ground three hours later over Roanne, after meeting further snow. Intense cold, 75 deg. frost; instruments frozen, machine covered with ice; food too frozen to eat. From Roanne ground visible times. Very relieved to see Lyons. Favourable wind throughout, but much time wasted avoiding storms. Vimy behaved splendidly. Arrived Lyons 3.40.

Nov. 13th.—Left Lyons 10.6, fine weather. Sunshine all day; few heavy clouds, otherwise perfect flying day. Flew along Riviera, crossed Gulf of Genoa; Remo, Spezia. Landed Pisa 2.40, too late to get to Rome. Going Taranto to-morrow. Alps looked very fine in sunlight. Vimy O.K.; crew well.

Nov. 14th.—Yesterday at Pisa heavy rain, aerodrome under water. Attempted to start, got bogged, and spent day on machine.

Nov. 15th.—Had engines running 8 o'clock to-day. Bogged badly in taxi-ing. Used planks and Italian mechanics dug out machine; bogged again, but finally got out. Start sensational. Serjt. Bennett (mechanic) held tail down until machine working, then made running jump at rear cockpit, hauled aboard by Shiers as machine was leaving ground. Aerodrome 2 in. under water, but Vimy rose beautifully. Crew very wet but cheerful. Encountered strong head wind, ground speed only 50 miles per hour. Passed through some heavy clouds, otherwise hazy and bumpy. Landed Rome 3 o'clock.

Nov. 16th.—Left Rome 9 a.m. Landed Taranto 11.45. Again low clouds, visibility bad. Passed over Capua and Naples, then turned east over mountains; flew low over Vesuvius, but weather too bad to photograph. Very bumpy over mountains, machine falling several hundred feet at times. Good wind helping us. Greatest assistance afforded us at Taranto by aerial route. Spent afternoon on machine.

Nov. 17th.—Left Taranto 8 to-day, arrived Suda Bay 4.35. Strong wind on our beam, low clouds, rain all the way to South

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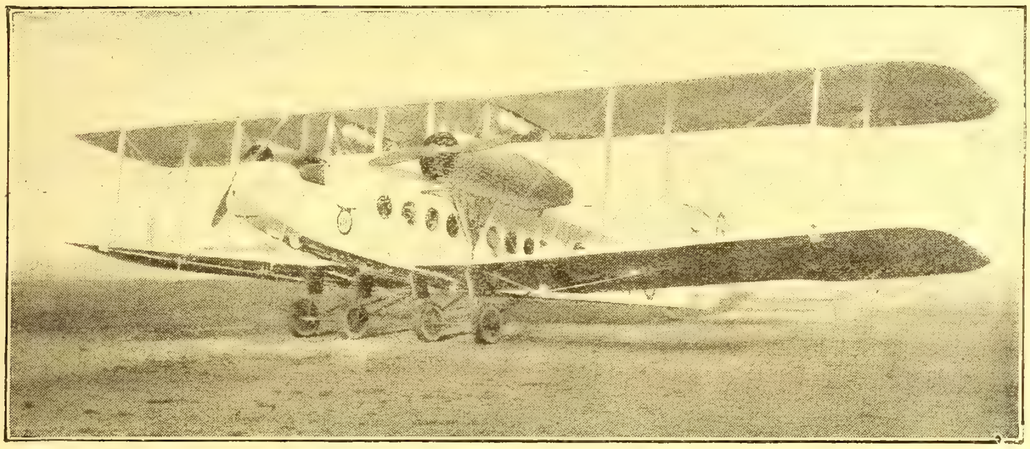

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Greece. Attempted to get above clouds, but too high, so flew at 800 ft. Following coast, nearly hit small island in mist. South Greece to Crete good weather, slight head wind.

Nov. 18th.—Left Suda Bay 8 to-day, arrived Cairo 3.30. Weather again bad. Low clouds made crossing Cretan mountains difficult. Wind slightly favourable, steered south course after leaving, but had to fly through rain at 2,000 ft. most of the way across the Mediterranean. Passed two steamers halfway; checked ground speed and drift on them. Crossing took 2½ hours. Struck African coast at Sollum, then flew east to Cairo across desert via Matruh. Hope to reach Damascus or Baghdad to-morrow. All very pleased to have got here. Hope for better weather now. So far have taken 30 flying hours, mostly through rain and storms. Throughout greatest assistance rendered by aerial route stations, nothing being too much trouble. It is largely due to their excellent organisation that we are here so soon. Vimy going perfectly.

Nov. 19th.—Left Cairo 10.30; dull weather. Crossed Canal at Kantara, then over Romani along coast under thick cloud to Gaza. Turned inland to Ramleh, then Haifa. Owing to heavy rain flew low to Jordan over Sea of Galilee, thence to Damascus. Interesting seeing old places again, recalling memories of the war. Landed, Damascus 3. Met many old R.A.F. friends.

Nov. 20th.—Delayed until 11. First rain since March. Ground getting sticky. Oiled tyres to stop mud sticking, and left. Flew to Tadmor, turned east, crossed desert Abu Kemal, followed Euphrates. Met head wind and landed at Ramadie battlefield at dusk. Pegged down machine. Heavy gale at night. Turned out troops to hold machine; anxious time for two hours, but Vimy weathered the storm.

Nov. 21st.—Left Ramadie 1.15; good wind; first good flying day of journey. Passed Baghdad, Kut, Garden of Eden, landed Basra 4.40. Overhauling to-day; Bunder Abbas to-morrow. Yesterday weather cheered all considerably after ten days' trying conditions. Crew well; engines behaving beautifully.

Nov. 22nd.—At Basra overhauling machine and engines, making adjustments; nothing wrong.

Nov. 23rd.—Left Basra 6.30; perfect day, beautiful sunrise. Flew over Bushire along coast Persian Gulf, landed Bunder Abbas (Persia), 2.20. Nearly eight hours in the air; machine never faltered. Persian coast very rough and barren. Passed several R.A.F. emergency grounds. Welcomed here (Bunder Abbas) by British Consul, the O.C. troops, and the local Persian Governor. Great interest manifested by local inhabitants; some had never seen an aeroplane. Hope to reach Karachi to-morrow if wind favourable, otherwise Charbar.

Nov. 24th.—Left Bunder Abbas to-day 7.30, arrived Karachi 4.10. Good day, uninteresting scenery. Followed coast all the way. Engines and machine no trouble; crew rather tired after nearly nine hours' flying. Welcomed in India by General Fowler and Air Force, also a party of Australians who "coo'eed" lustily. Weather much warmer—a contrast with England 13 days ago. Hope to reach Delhi to-morrow if wind favourable.

Nov. 25th.—Left Karachi to-day 7.40, arrived Delhi 4.30. Journey uneventful. Good day, slight head wind. Met by General MacEwen and numerous others. All Air Force arrangements perfect; greatest assistance. During last three days have flown 25 hours, covering 1,600 miles. Machine and engines no trouble; crew well. Allahabad next, possibly to-morrow.

Nov. 26th.—Remained at Delhi resting.

Nov. 27th.—To-day at 10.30 flew over city 10 minutes, then started Allahabad. Near Muttra one oil gauge "dud." Landed and repaired. Continued; after 90 minutes landed at Allahabad 5 p.m. Good flying. Passed Taj Mahal at Agra, Cawnpore. Crew and machine well.

Nov. 28th.—Left Allahabad 8.30, arrived Calcutta 1.45. Good trip. Following wind, clear sky, uneventful. Landed on the racecourse; large crowd. All well. Akyab to-morrow.

Nov. 29th.—Left Calcutta 8.30; landed Akyab 1 p.m. A large and distinguished gathering to see us off, including Lady Ronaldshay and many cinemas and cameras. Great interest was displayed in machine, especially in the parts which flew the Atlantic with Alcock. The racecourse at Calcutta is small when taking off. Many hawks were circling round close to the ground. We were very frightened that a hawk would hit the propeller and smash it.

Just off the ground the machine struck two hawks, one hitting the propeller at a nasty moment as the machine almost hit the trees in avoiding more birds. No damage to the propeller, but pieces of hawk were hanging on the machine the whole journey.

Circled Calcutta and flew east to Chittagong across mouths of the Ganges, and then south in good weather. Poulet here. Both machines leave for Rangoon to-morrow. All well.

Nov. 30th.—Arrived at Rangoon. The Vimy and the Caudron first machines seen there. Both flew from Akyab across country to Irrawaddy River which followed to Prome. Thence guided by railway to Rangoon. Calcutta-Rangoon best part of journey. Leaving to-morrow for Bangkok.

Dec. 1st.—Arrived at Bangkok. Greatest assistance and courtesy shown by Prince Pitsanoluke and aviation corps.

Dec. 2nd.—Left Bangkok 7.0 and arrived at Singora at 1. Escorted first 50 miles by four Siamese machines. Course south along east coast of Malay Peninsula. First two hours good, then met heavy monsoon; rain, wind strong and changeable, sometimes helping and sometimes against. Necessary to fly 500 ft. three hours, following coast. Almost blinded with rain, but country impossible for landing. Had to continue, hoping for the best. Worst flying conditions ever encountered. Last hour better. The aerodrome at Singora is bad and stumpy. Had to land in a cross wind on a small dry patch. Safely down with luck. Later, taxi-ing the machine, tail skid caught root and broke fitting; not serious. Great interest of local population in seeing their first aeroplane. Decided that, owing to weather, we could not reach Singapore without more petrol. Wired Asiatic Petroleum Company, Penang, to send urgently. During night heavy squalls; crew held machine all night. Great assistance and hospitality, Prince Yugala and local officials.

Dec. 3rd.—Torrential rain with wind. Repaired skid, crew wet through, working on machine all day cheerfully. Petrol arrived evening; raining too hard to put in.

Dec. 4th.—My birthday. Weather bad. Decided to try for Singapore. Left Singora 10, arrived Singapore 5. Take off at Singora very rough, but convicts had cleared stumps yesterday. Aerodrome very wet in patches. Got off in a cross wind—lucky. Rain all the way. Flew 2,000 to 500 ft. all the way. Great reception here, huge crowd. Hope Java December 6th. Port Darwin, Dec. 10th. Vimy and crew well.

Dec. 5th.—Rested at Singapore.

Dec. 6th.—Flew to Kalidtjatti in Java, nearly 700 miles. Worst stage of journey as regards landing grounds. On arrival at the Dutch Military Flying School were greeted by the Governor-General of the Dutch East Indies and others.

Dec. 7th. Went from Kalidtjatti to Sourabaya. Uneventful trip. The aerodrome appeared hard, but was very soft underneath. Landed successfully, but when taxi-ing machine sunk to axles. Required 200 coolies to get machine out. Bamboo mat road then constructed. The machine was moved to end of the ground 400 yards in seven hours using the mats in relays. Dinner with British residents.

Dec. 8th.—At the aerodrome at daylight. By 9 a.m. had built mat road 300 yards in length. Attempted to start, but some mats caught the tail, machine swerved round and once more badly bogged. Dug machine out. At noon had constructed a road of laced mats 350 by 20 yards. Started again and succeeded in getting off. Flew east along islands and landed at Bima in Sumbawa. Excellent Dutch aerodrome. Well entertained by local Sultan and Dutch Controller

Dec. 9th.—Started for Atamboca in Timor Island, another Dutch military station. Entertained by commandant. Only 350 miles to Port Darwin.

Dec. 10th.—Up at dawn, rode to aerodrome, three miles on Timor ponies. Thick fog delayed us two hours. At 8.30 a.m. fog lifted and headed for Darwin flying by compass. At 10.30 sighted cruiser "Sydney." At 12.30 sighted Bathurst Island, first glimpse of Australia. Landed Port Darwin 3.30 p.m.

A correspondent writes :—

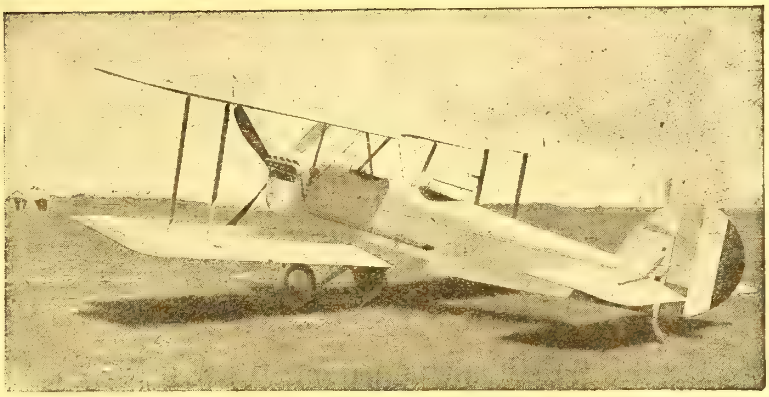
At the works the news of the landing of Capt. Ross Smith at Port Darwin was received at Vickers Weybridge works at 11.45 a.m. on Dec. 10th, but there was no boisterous enthusiasm displayed as when the Atlantic flight was accomplished, for the workpeople were confident of the success of of their machine after reading the reports of its progress. Nevertheless, everybody was manifestly proud of the achievement.—J. F. S.

The Martinsyde Disaster.

The Air Ministry announced on Dec. 16th that information received from official sources threw further light on the loss of Capt. C. E. Howell, D.S.O., M.C., D.F.C., and Air Mechanic Henry Fraser, who fell into the sea at San Georgio Bay, Corfu, on Dec. 9th.

The accident is reported to have occurred at 8 p.m. A naval motor-boat and some fishermen proceeded to the spot where the machine had fallen, but arrived too late to save the occupants. The machine is lying in 30 ft. of water, and is believed to be salvable, although the bodies of the crew have not yet been found.

The machine left Taranto at noon on Dec. 9th bound for Athens, a distance of 400 miles, and apparently the aviators must have lost their way as they only reached Corfu, which was on their direct route, at 8 p.m., a distance of 150 miles, after eight hours' flying. The machine had a cruising speed of 100 miles per hour, and it is conjectured that she ran out of petrol, as it is unlikely that she would be filled up with petrol for the short run to Athens. According to weather reports the day was misty.



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It is a Two-Seater—Single Engine Tractor—which has attained on test a speed of over 100 miles per hour.

Its outstanding features are :—

CHEAP AND EASILY HOUSED. The Initial cost is extremely low—£700—and the cost of running for a machine of this type and performance is reduced to a minimum. Owing to its small size it is easy to handle on the ground and requires but little accommodation. The principal dimensions are: Span, 27 ft. 6 in.; Length, 25 ft.; Height, 10 ft.

EASY TO FLY. The P. 9 has a big speed range, and low landing speeds, and this combined with Stability at all trimming speeds and well-balanced controls, allows the machine to be flown for long periods without undue fatigue. It also gives the maximum of Safety possible.

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The uses to which this compact and efficient machine can be put are wide and various, and will suggest themselves to those who have been awaiting the stage of Aeronautical Development now reached by the P. 9. It can be used for dozens of Commercial Purposes. The same type carried photos from R. 34 direct to London. It has been sent to Australia for Sheep-runs—and will soon be in use in various parts of the world for Exploring Uncharted Territory, Examining Timber Tracts, Fighting Forest Fires, Carrying Mails to Distant Mines, Transition of Colonial Mails to Mail Steamers, and for General Patrolling and Police Purposes.

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By arrangement with the British and French Post Offices an express airmail is now carried daily on this route. The fee is 2s. 6d. an ounce, over and above the usual rates of postage, and letters which are handed in during the morning in London, up to the times indicated, and at the Post Offices specified below, will be delivered in Paris by about 4 p.m. the same afternoon.

G.P.O., King Edward's Buildings, 11 a.m.; Threadneedle Street, 10.45 a.m.; Lombard Street, 10.45 a.m.; Parliament Street, 10.45 a.m.; Charing Cross 10.50 a m.; W.C. District Office, 11.10 a.m.; W. District, 11.15 a.m.; S.W. District Office, 10.40 a.m.

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The passenger fares are as follows:—Single, £21; return, £42. This fare includes free conveyance by motor-car to Hounslow Aerodrome from any point within a mile of Piccadilly Circus, and also conveyance by motor from Le Bourget into Paris. Similar arrangements exist as to the journey from Paris to London. A passenger, called for at an hotel in London at 11 a.m., arrives at the door of his hotel in Paris by 4 p.m. the same afternoon.

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The rate for parcels is 5s. lb., but in the case of parcels weighing more than 2 lbs., or for regular consignments, much lower rates can be quoted If handed in up to 10 a.m. at the agents specified below, parcels will reach Paris the same afternoon; whereas by land and sea, even if a special "Grand Vitesse" fee is paid, a parcel is several days, and perhaps a week, in reaching its destination.

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NOTE.—Parcels are received up to 10.30 a.m. at the two depots mentioned above of the American Express Company; or up to as late as 11.30 a.m. at the Hounslow Aerodrome.

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THE PRODUCTS OF THE BRITISH AIRCRAFT INDUSTRY.—II.

In the issue of December 17th, under this heading were described the aircraft, aero-engines, and aeronautical accessories manufactured by the British and Colonial Aircraft Co., Ltd., the Westland Aircraft Co., Wm. Beardmore, Ltd., Austin Motors, Ltd., Martinsyde Ltd., Parnall & Co., the Aircraft Manufacturing Co., Ltd., Short Bros., Rolls-Royce, Ltd., the Cosmos Engineering Co., Ltd., and S. Smith & Sons (M.A.), Ltd. In addition, the B.H.P. engines manufactured by Arrol Johnston, Ltd., the Galloway Engineering Co., and the Siddeley Co. were described.

A further series of the products of other members of the Industry will be found below.

A. V. ROE AND CO., LTD.

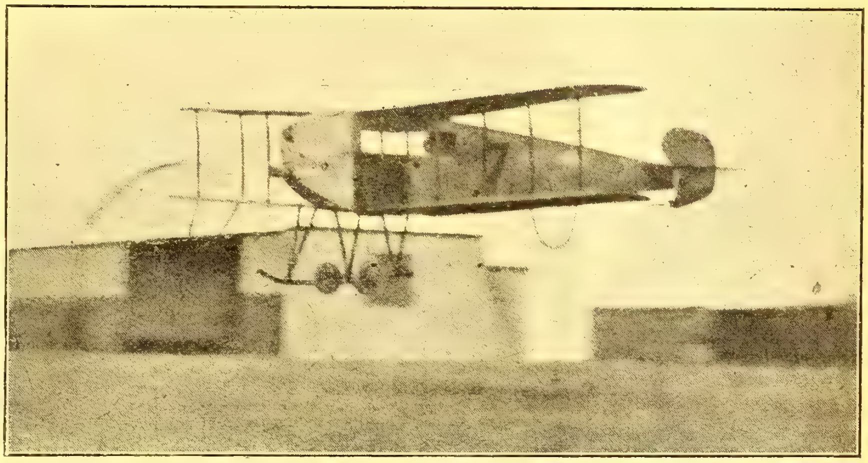
The Avro firm requires little introduction to the world at large. Even in Germany its products were well known before the war, and during the war the Standard Avro two-seater has been a familiar sight in all Allied countries.

Of the early history of the firm it may suffice to mention here that in 1912, being then even a firm with an aeronautical history behind them, they had already produced and flown successfully two totally enclosed aeroplanes, the one a single-seater monoplane with a 40-h.p. 5-cylinder "Viale" engine, and the other the well-known "Military Trials" Avro two-seater with a 60-h.p. Green engine.

These two machines may properly be considered to be the direct ancestors of the modern "Limousine" type, and it is interesting to compare the two photographs here attached showing the modern Limousine version of the Avro, with the 1912 two-seater.

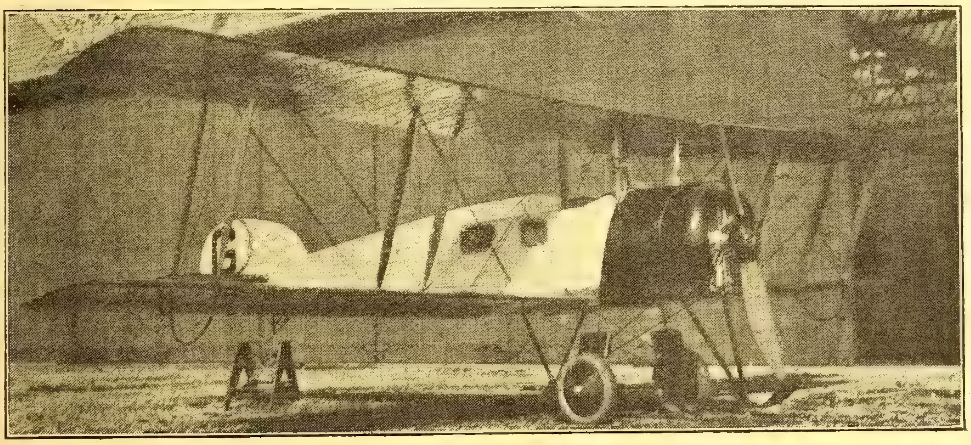
THE AVRO "LIMOUSINE."

The Avro "Limousine" is essentially a modified Standard Avro training machine, fitted with a somewhat wider fuselage and centre section. Spare parts for the Standard type are also suitable for the "Limousine," and there is therefore no possible difficulty as to the supply of replacements, and, as the airworthy qualities of the original are conserved in the modified version the machine must be considered one of the most useful of small passenger carrying craft.



The ancestor of the "Limousine" Aeroplane. The all-enclosed Avro Biplane (60-h.p. Green engine), flying at the Military Trials, 1912.

The following table gives the main dimensions and the performance of this machine fitted with the B.R.1 engine. It is to be noted that, as with the standard machine, it is possible, to fit any of the Standard type rotary engines of from 100 to 150-h.p. and the A.B.C. "Wasp" of 170 h.p. to this machine without structural alterations.



THE NEW AVRO "LIMOUSINE."—This machine is one of the five-seater type Avros with the passengers' compartment enclosed. Two comfortably sprung bucket seats are fitted, and the cabin is provided with a door on each side of the body. Large Triplex glass windows are fitted.

SPECIFICATION.

Type...Enclosed "Limousine"
Name ..... Avro "Limousine."
Purpose
Passenger carrying, etc.
Span ....36 ft. 9 in.
Wing area ....335 sq. ft.
Tail area ....26 sq. ft.
Elevator area ....18 sq. ft.
Rudder area ....9 sq. ft.
Fin area ....6 sq ft.
Ailerons area ....45.5 sq. ft.
Engine and h.p.
150-h.p. B.R.1.
Airscrew, diam. and pitch and revs. ...2-bladed Avro
9 ft., 7 ft., 1,300.
Weight of machine empty
1,431 lb.
Load per sq. ft. ....7.42 lb.
Weight per h.p. ....16.5 lb.

PERFORMANCE—	
Speed low down	90 m.p.h.
Speed at 10,000 ft.	75 m.p.h.
Landing speed	40 m.p.h.
Climb—	
To 5,000 ft.	10.2 min.
To 10,000 ft.	27.8 min.
To 12,000 ft. (Service ceiling)	41 min.

Other interesting recent products of the Avro Co. of a type suitable for sporting civilian use are the Avro "Baby" and the type 538.

THE AVRO TYPE 538.

The type 538 is a single-seater racing machine which can be fitted with any of the standard rotary or radial engines up to 170 h.p. In spite of its small size it is fitted with a double bay wing bracing, securing a light but sturdy structure.

The general particulars are :

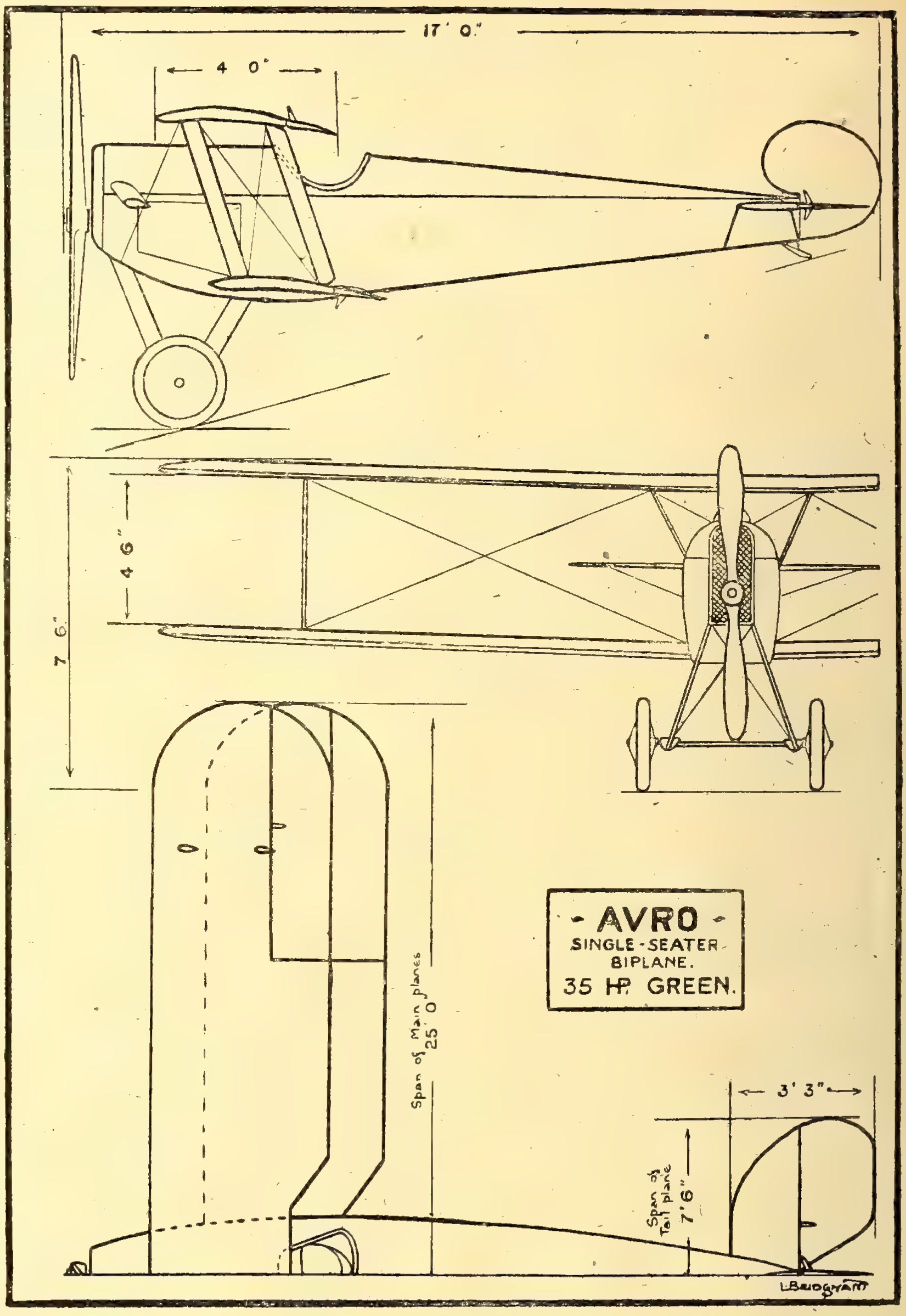
Span	28 ft.
Length overall	20 ft. 6 in.
Height overall	8 ft. 6 in.
Weight empty	975 lb.
Weight loaded	1,400 lb.
Petrol capacity	26 gall.
Oil capacity	6 gall
Total surface	210 sq. ft.
Weight per h.p.	9.35 lb. (150 h.p).
Weight per sq. ft.	67 lb.
PERFORMANCE—	
Speed at sea level	125 m.p.h.
Speed at 10,000 ft.	112 m.p.h.
Landing speed	46 m.p.h
Climb—	
To 10,000 ft.	10 min.

Cruising range at ¾ power, 108 m.p.h.; at 1,000 ft.—320 miles. The above figures relate to the machine fitted with the 150-h.p. Bentley Rotary (B.R.1.).

THE AVRO "BABY."

The little Avro "Baby" fitted with the 35-h.p. 4-cylinder Green engine has already established a reputation by reason of its excellent performance in the London Aerial Derby—wherein it won the handicap—by its flight to Amsterdam and back, etc.

The whole machine is simple in construction, easy to house, the engine is reliable and very quiet in running, and the performance is, considering the low power used, extremely good. As the machine is stable and easy to fly, has a very low landing speed, and is capable of every brand of "stunt" yet known to the pilot, it represents an ideal machine for the sporting owner-pilot. The dimensions, etc., are :



Span	25 ft.
Length overall	17 ft.
Height overall	7 ft. 7 in.
Weight empty	610 lb.
Weight loaded	825 lb.
Petrol capacity	6 gall.
Oil capacity	1 gall.
Total area	180 sq. ft.
Loading	4.58 lb. per sq. ft.
Weight per h.p.	20.6 lb.
PERFORMANCE—	
Speed at sea level	80 m.p.h.
Speed at 10,000 ft.	71 m.p.h.
Landing speed	33 m.p.h.
Climb—	
To 5,000 ft.	11 min.
To 10,000 ft.	25 min.
Cruising range at 1,000 ft. and at 65 m.p.h.	200 miles.

THE BRITISH AERIAL TRANSPORT CO.

Founded in 1917 to exploit the designing capabilities of Mr. Frederick Koolhoven, the B.A.T. Company has quickly achieved a world-wide reputation as designers and constructors of aircraft of very high performance.

THE "BANTAM."

The first production, the B.A.T. "Bantam," designed in 1917 as a single-seat fighter, was an immediate success. The essential features of this machine were : the three-ply fuselage of oval section entirely devoid of internal bracing wires, and of a maximum depth equal to the interplane gap, and the use of a two-bay bracing on wings of only 25 ft. span, together with the provision of a very wide undercarriage with wheels set under the inner row of interplane struts.

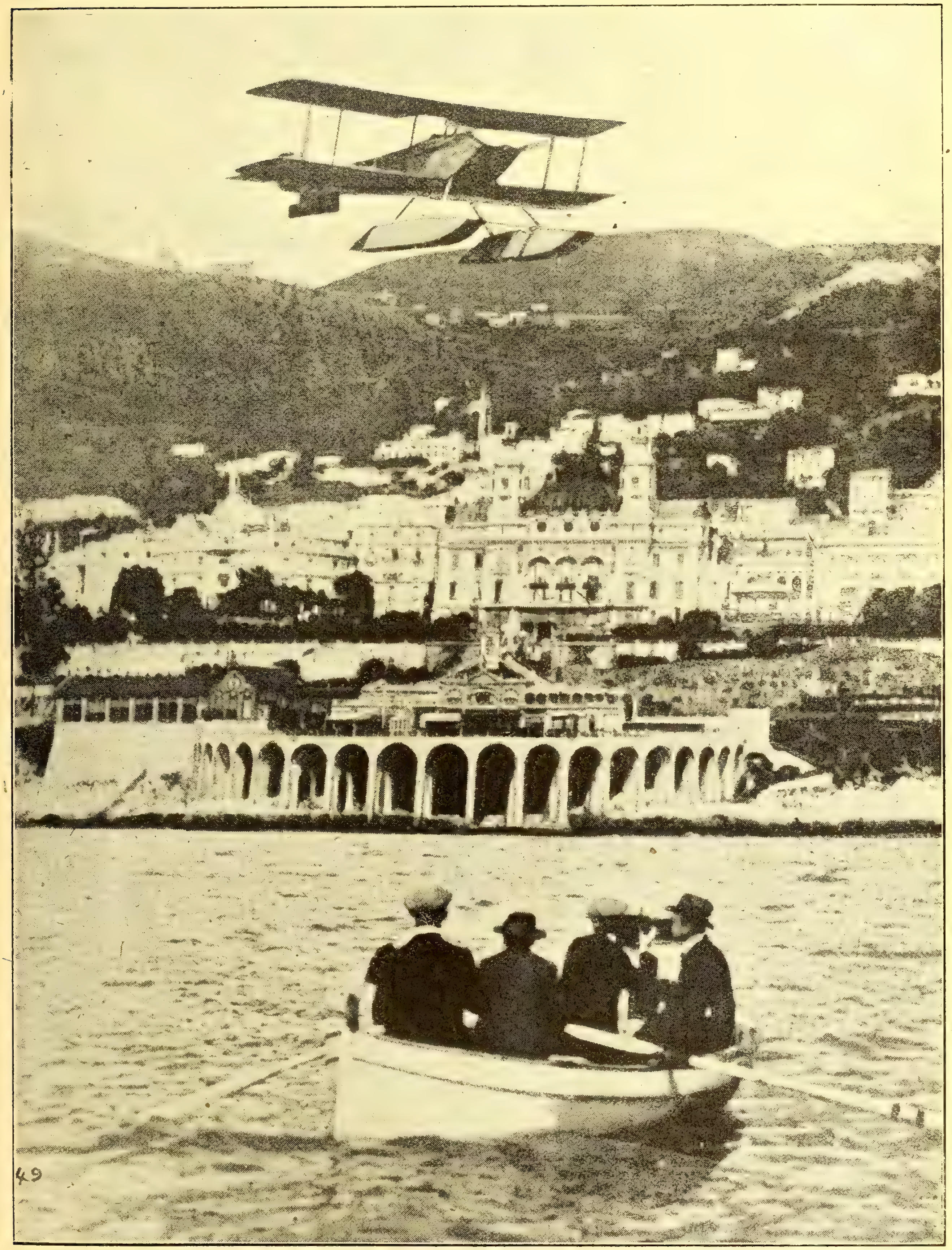
The three-ply fuselage is light and simple, and is extremely difficult to damage by machine-gun fire.

The use of a two-bay bracing for the wings permits of a light structure combined with strength and rigidity. The wide chassis renders it extremely unlikely that the wing tips will be damaged when landing on even the roughest ground.

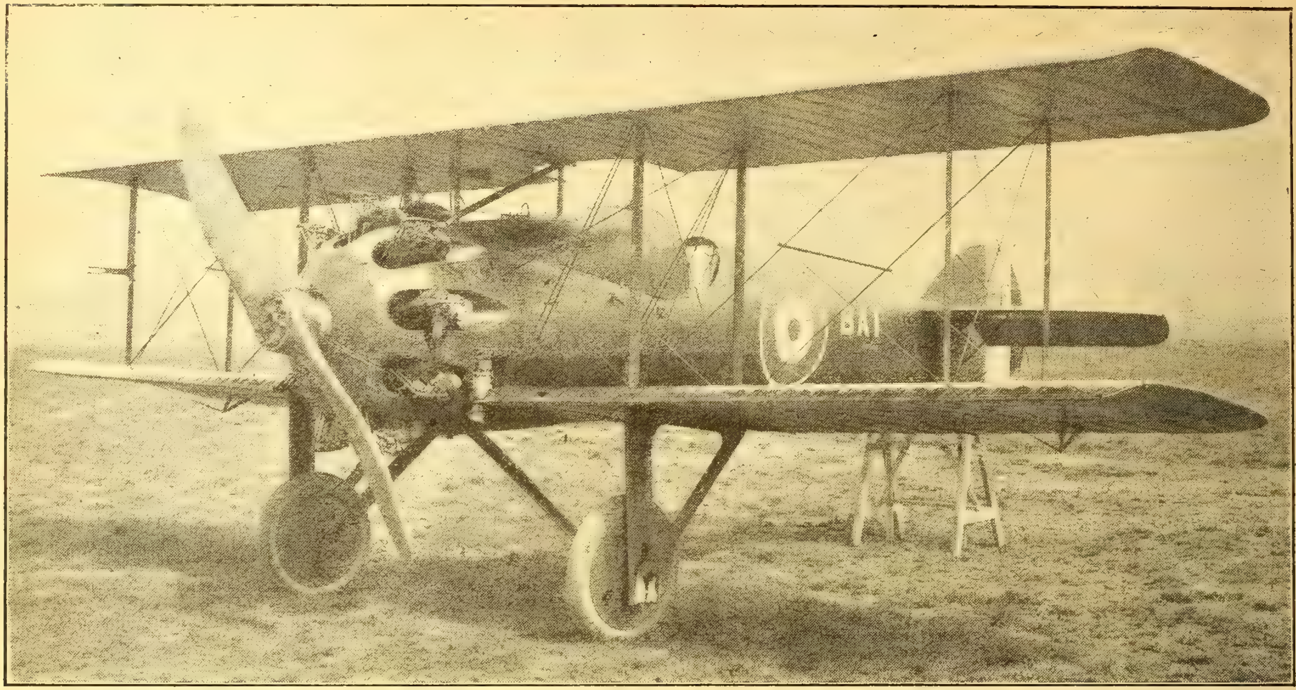
The engine fitted was the A.B.C. air-cooled radial "Wasp" of 170 h.p.

Throughout the machine every part is of the simplest possible design. There are no forgings, and cast and machined parts are practically absent. As a fighter the machine possesses unique qualities. The pilot is so placed that by raising his head slightly through a hole in the top plane he has a clear view round in all directions, while the sides of the fuselage under the top wing are so cut away as to provide a perfect view downwards both in front and behind the bottom plane.

The grouping of the principal loads near the centre of gravity and the careful disposition of the control surfaces make



THE FIRST BRITISH VICTORY.—The Sopwith Seaplane, with 100-h.p. Monosoupape Gnome engine, piloted by C. H. Pixton, winning the Schneider Cup Race at Monaco in 1914.



The B.A.T. "Basilisk" (A.B.C. 320-h.p. "Dragonfly" engine).

this machine exceptionally quickly responsive to its controls and consequently a redoubtable fighter.

The armament consists of two Vickers' guns firing through the propeller by means of the C.C. gear, and 1,000 rounds of ammunition; the guns being placed inside the fuselage on either side of the pilot, they are very accessible and easily attended to in the air.

The following are the chief figures relating to this machine :—

Span	25 ft.
Overall length	18 ft. 5 in.
Total area of planes	185 sq. ft.
Weight loaded	1,330 lb.
Military load carried	525 lb.
Petrol capacity	22 galls.
Oil capacity	2½ galls.

Range of action 3½ hours, equal to 440 miles at 15,000 feet.

Performance—

Speed at ground level	135 m.p.h.
Speed at 10,000 ft.	134 m.p.h.
Speed at 15,000 ft.	127 m.p.h.
Landing speed	50 m.p.h.
Climb—	
To 3,000 ft.	1 min. 30 sec.
To 10,000 ft.	7 min. 19 sec.
To 15,000 ft.	14 min.
To 20,000 ft.	22 min.

THE "BASILISK"

The B.A.T. "Basilisk," produced during 1918, was designed on lines very similar to the "Bantam," the main differences being an increased gap and chord, the setting of the pilot's seat aft the main planes, the raising of the upper plane to the level of the pilot's eye, and the installation of the A.B.C. "Dragonfly" of 320 h.p. The same simplicity and robustness of construction that characterised the "Bantam" is to be found in the "Basilisk," combined with a greatly improved performance.

The main dimensions of the machine are :—

Span	25 ft. 4 in.
Overall length	20 ft. 5 in.
Total area	220 sq. ft.
Weight (loaded)	2,000 lb.
Weight (empty)	1,275 lb.
Petrol	40 galls.
Oil	4½ galls.

Range of action 3 hours, equal to 475 miles at 10,000 feet.

Performance—

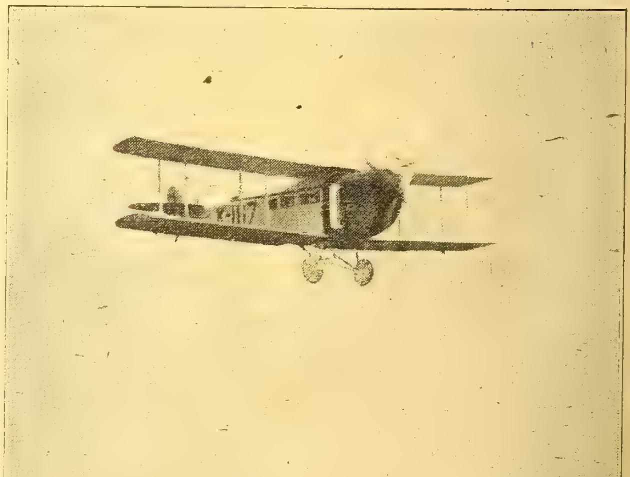
Speed at ground level	162 m.p.h.
Speed at 10,000 ft.	154 m.p.h.
Speed at 15,000 ft.	144 m.p.h.
Landing speed	52 m.p.h.
Climb—	
To 10,000 ft.	4 min. 20 sec.
To 15,000 ft.	8 min. 30 sec.
Service ceiling	29,000 ft.

THE B.A.T. F.K.26.

This machine is quite an exceptional product, for it will always bear the distinction of being the first aeroplane ever constructed solely for commercial purposes.

The designs were commenced the day after the great Armistice of 1918 was signed, and the machine was flying—and considerably exceeded its expected performance—in the Spring of 1919. To those who follow aircraft design closely it must be interesting to hear—so accurately was the original design conceived and interpreted throughout the drawing office and workshops—that once erected and flown the machine needed no adjustment whatever. She was *au point* on her very first flight.

The object in view in producing the F.K.26 was to provide an aeroplane equally suitable for mail or goods carrying or passenger work—a machine of moderate price, having a definite speed and load capacity advantage and a high degree of



The B.A.T. F.K.26 Passenger-carrier in the Air.

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Specialists in the design and construction of Seaplanes, Flying Boats, and every kind of Marine Aircraft.

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SEWN PLYWOOD.

The finest material yet evolved for Aircraft Construction.

"CONSUTA," the Super-Plywood, is actually sewn together. The layers are first cemented together with waterproof material and then stitched through in parallel rows about 1¼ inches apart.

This gives a rigidity and resilience unattainable by any other method. Weight for weight, it is the strongest material yet evolved.

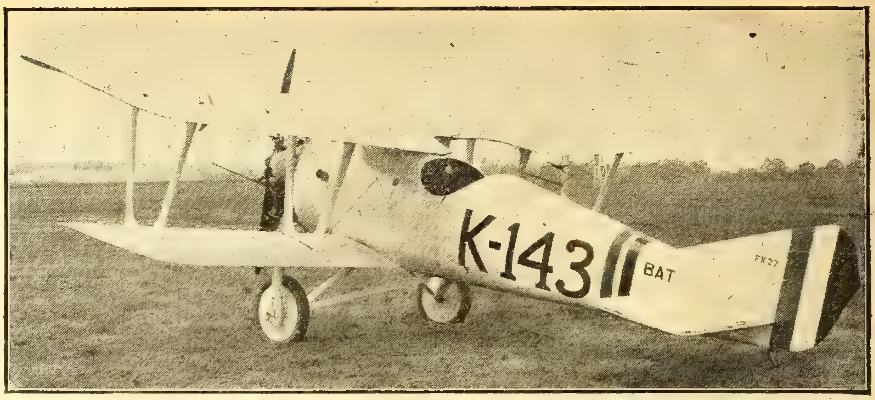
"Consuta" is used for the cabins of the commercial type of Vickers "Vimy" bombers, entirely dispensing with the use of cross-bracing wires. It is now being used for the whole covering of flying boats—the largest type yet built. Its uses are limitless.

The sheets are made to any desired size or shape up to 8 feet wide by 60 feet long, and from ⅛ inch to ⅝ inch thick, thus eliminating waste in conversion.

WE SHALL BE PLEASED TO QUOTE FOR YOUR REQUIREMENTS.

general utility. A single-engined machine of the capacity of F.K.26 was chosen because it is believed that this general type will most efficiently fill the requirements of civil commercial aviation for the next few years at least.

As far as postal air traffic is concerned, high authorities agree that machines carrying approximately 1,000 lb. useful load will be the most effective in fulfilling trans-Continental mail requirements. It is obvious that the success of a mail service will, given regularity, hinge entirely on speed, and it follows that it will be more advantageous to the general community to have a frequent and rapid service transporting moderate loads than a lethargic and slower service catering for the very high load.

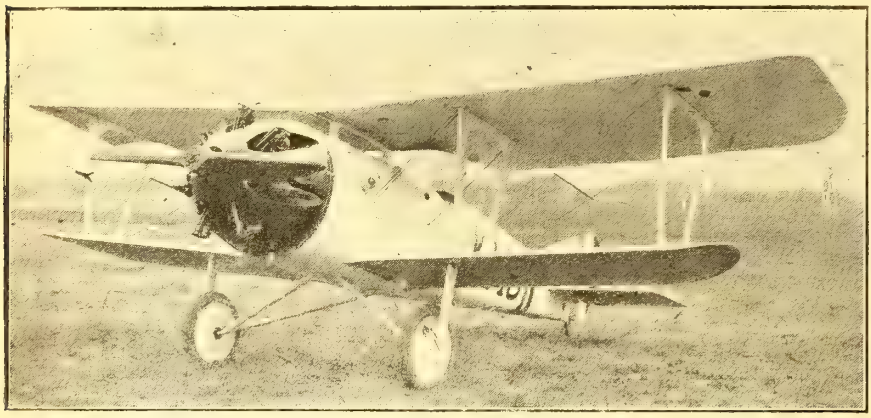


Three-quarter Rear View of the B.A.T. Sporting two-seater.

The same applies to passenger transport. Until a definite knowledge of the passenger-carrying capacity required on the different routes is gained by practical experience, it will be more economical and efficient to employ machines of moderate accommodation always working at full capacity than to run the risk of having larger and more costly machines flying with one half, or less, of their full remunerative load.

So much for the aim underlying the design of this type.

In actual performance the F.K.26 is capable of taking a useful and remunerative load of 1,000 lb. with sufficient fuel on board to give her an effective range of 660 miles at an economical cruising speed of 110 m.p.h. Constructionally the machine is clean, simple and straightforward throughout, which makes for ease and economy in effecting running repairs. One of her most remarkable features is the cabin, which measures 8 ft. long by 6 ft. high by 3 ft. 3 in. wide, and which has no internal cross-bracings or obstruction to restrict the freedom of movement and comfort of the passengers carried. That such a large cabin could be introduced into a machine of such relatively small over-all dimensions (the fuselage measures only 35 ft. and the span 46 ft.) is exceptional, especially as it has been attained without sacrificing any strength at that part of the fuselage where the cabin is situated.


The B.A.T. Sporting two-seater (200-h.p. "Wasp" A.B.C. Mark II engine).

The landing chassis is a strong and sturdy job sprung by a combination of elastic and oleo shock absorbers working on the same principle as the recoil mechanism of a gun. With the machine's low landing speed of approximately 45 m.p.h., and such a strong but flexible chassis, safe landings are possible under circumstances where machines of less thoughtful design would suffer damage.

The tail is a more or less conventional arrangement; the stabiliser, however, is capable of incidence adjustment by means of a hand wheel by the side of the pilot's seat, to enable any variations of balance caused by any changes in the quantity or disposition of the load carried to be compensated for while the machine is in flight. The rudder is fitted at its lower extremity with a sturdy, well-sprung steerable tail skid, so that the machine may be manœuvred on the ground with ease and certainty.

The Rolls-Royce "Eagle VIII" engine is fitted as standard and is covered by a black enamelled cowl, the whole of which is detachable in order to give free and open access to the engine. The cooling is effected by two narrow vertical radiators on either side of the fuselage.

All engine controls from the pilot's cockpit to the engine compartment are positive, transmission being effected in each case by duralumin tubes mounted in ball bearings.

The engine may be started by the pilot from his seat.

THE B.A.T. SPORTING TWO-SEATER BIPLANE.

TYPE F.K.27.

This machine was specially designed to avoid the disadvantages of the existing war types of machines when adapted for private purposes; these types invariably being either too bulky and expensive in upkeep or insufficiently powerful for all-weather use, and deficient in that speed which is, and will undoubtedly remain, the great advantage of aviation over all other means of transport. At the same time the sociability of a two-seater car has been aimed at.

The result is a small biplane, more or less of the same type as the famous "Bantam," but seating two persons side by side in such a position that, owing to the small chord of the bottom plane, a perfect view in all directions is obtained. There is ample space for luggage, and a very complete range of instruments is fitted.

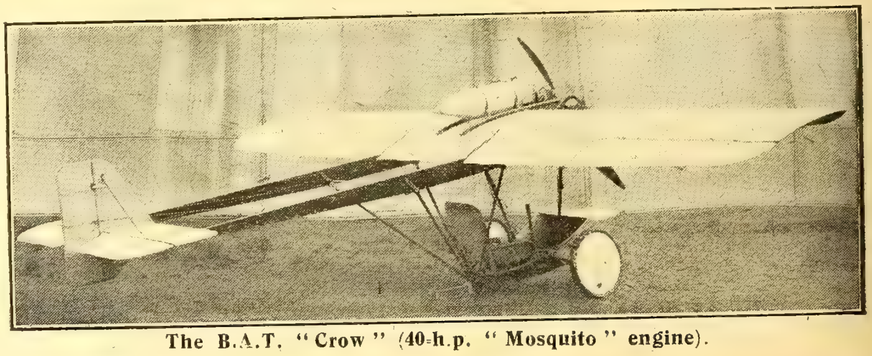
Constructionally, the well-tried B.A.T. features are followed. The fuselage is entirely of three-ply wood construction, containing very few parts, easy to repair, and practically proof against any weather or climate.

The planes are quickly detachable by withdrawing six large pins, and detaching a few streamline wires. The number of the latter throughout the machine is very small, as incidence bracing is avoided by the special wing struts.

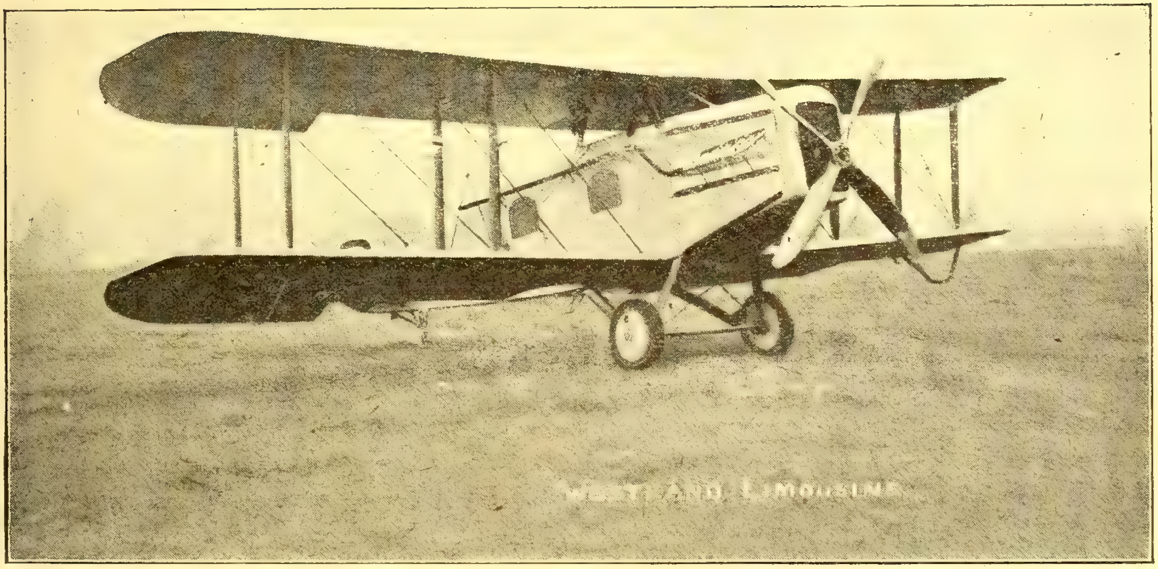
The engine is the 200-h.p. A.B.C. type "Wasp II," a radial 7-cylinder air-cooled type. It is extremely reliable and simple.

The chassis is also of the special B.A.T. type, the wide track of the wheels making landing exceptionally safe. The tail skid is steerable for manœuvring at low speed on the ground.

The span being only 26 feet by an over-all length of 20 feet, housing and handling is not a matter of difficulty. The performance is very high, a maximum speed of 140 m.p.h. being maintained, coupled with a landing speed of under 50 miles per hour. A height of 10,000 feet is reached in 7.5 minutes.


The B.A.T. "Crow" (40-h.p. "Mosquito" engine).

WESTLAND



If you are visiting the Paris Aeronautical Exhibition we shall be pleased to show you the Westland "Limousine" on Stand 20.

We shall also have another machine at Le Bourget Aerodrome for giving demonstration flights.

Above is illustrated the model we intend to exhibit. The first machine, which has been flying since last July, has proved an ideal machine for mail carrying or passenger transport-de-luxe.

For full particulars and arrangements as to trial flights apply to our London Representative, **Lieut.-Colonel C. H. MEARES,** c/o MESSRS. PETTERS LIMITED, 6, DEAN'S YARD, WESTMINSTER, LONDON, S.W.1.

WESTLAND AIRCRAFT WORKS
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The machine is easy to fly, and in every way suitable for the sporting private owner or for any purposes where a load of up to 200 lb. is to be transported up to 400 miles in the shortest possible time.

THE B.A.T. "CROW" TYPE F.K.28.

This machine stands in the same relation to the usual type of aeroplane as the motor-cycle does to fully-equipped touring car.

In size, one of the smallest aeroplanes in the world, in construction, the simplest ever designed, it stands in a class entirely by itself. It is a remarkable fact that the whole machine can be completely dismantled in a few minutes by the aid of only one small spanner and a pair of pliers.

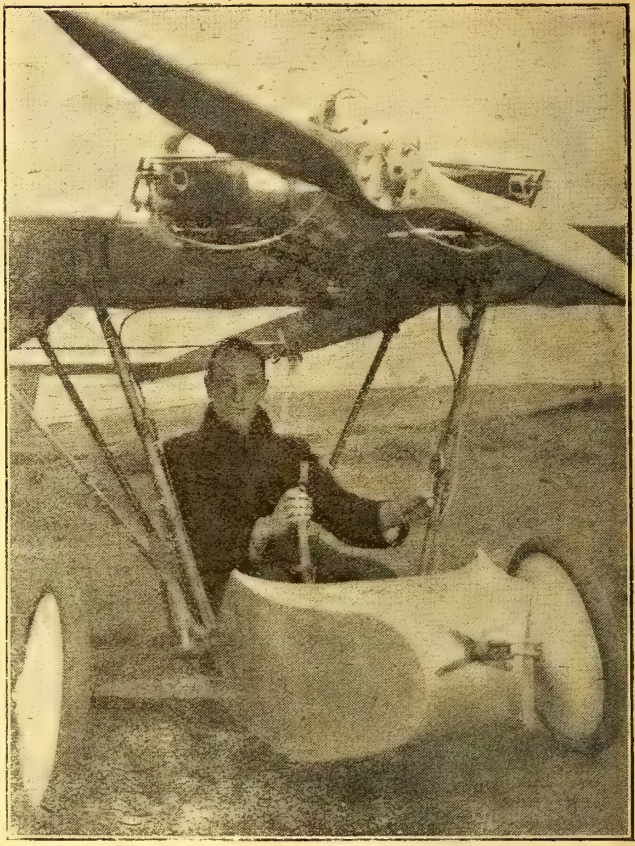
For ordinary storing purposes, where sufficient hangar space is not available, the single plane is taken off by removing 12 nuts. There are no bracing wires, and consequently no trueing up is necessary.

The pilot is seated under the plane in a little body on the big central skid between the wheels. This position, so near the ground, makes landing the machine on any sort of ground perfectly easy; in the case of very rough ground, the long skid prevents the machine turning over.

The engine, a 40-h.p. A.B.C. "Gnat," of the flat twin cylinder air-cooled type, is mounted on the front of the plane, and forms, with its mounting and the petrol and oil tank, a complete unit which is easily detached.

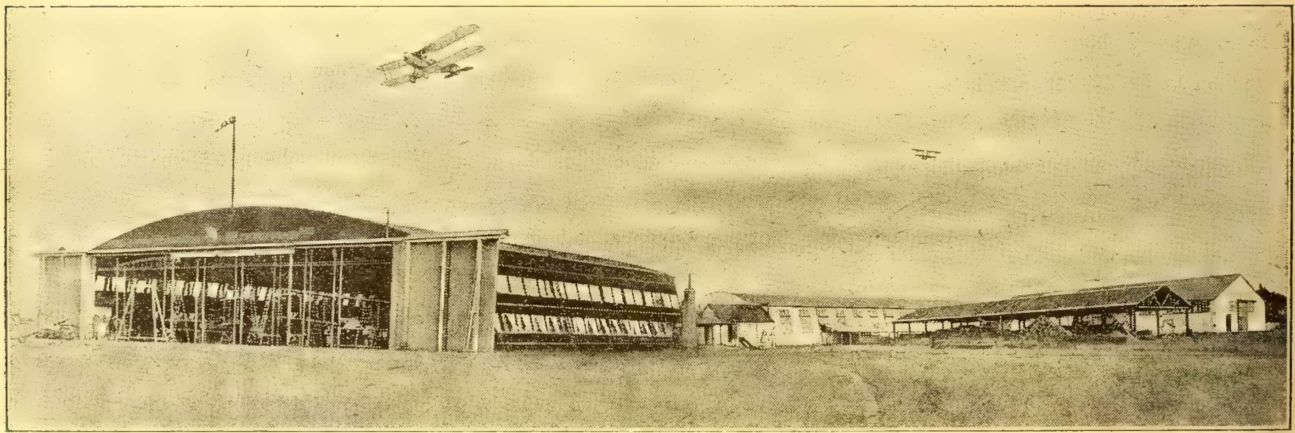
The torpedo-shaped tank holds 5 gallons of petrol and half a gallon of oil, sufficient for a flight of nearly two hours, covering a distance up to 120 miles.

It will be realised that this cheap miniature machine, with its unique position for the pilot, its extreme simplicity and accessibility, and its up-to-date flying capacities, is adaptable to a multitude of purposes in fields of utility which no aeroplane has hitherto touched. Among these, particular attention is drawn to its possibilities in the Colonies, for forest districts where the roads are the only landing space.



The "habitacle" of the B.A.T. "Crow."

MANN, EGERTON AND CO., LTD.



Mann, Egerton and Co.'s Aircraft Works at Norwich.

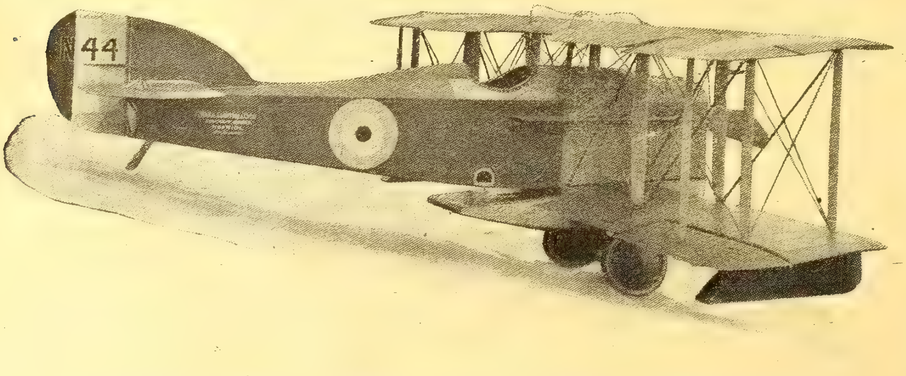
Mann, Egerton and Co., Ltd., of Norwich, commenced their operations in 1899 as electrical engineers, and added unto themselves very shortly after a motor-car department.

The combined businesses led to a considerable development of their affairs, which continued to increase in prosperity till the outbreak of war.

The company then undertook a large quantity of war emergency work and constructed many ambulances, car bodies, etc., for official purposes.

Very shortly they were asked by the Admiralty to organise the manufacture of seaplanes, a task which they undertook with conspicuous success, and seaplanes and aeroplanes in large numbers were turned out by them to the order of the Admiralty, the Air Board, and the Air Ministry.

Amongst the types produced were Short seaplanes, Short land bombers, Sopwith one-and-a-half strutters, Spad single-seaters, DeH.9s, DeH.9as, De H.10s, and so forth and so on.



The Mann, Egerton "Seaboard Scout" (200-h.p. Hispano-Suiza).

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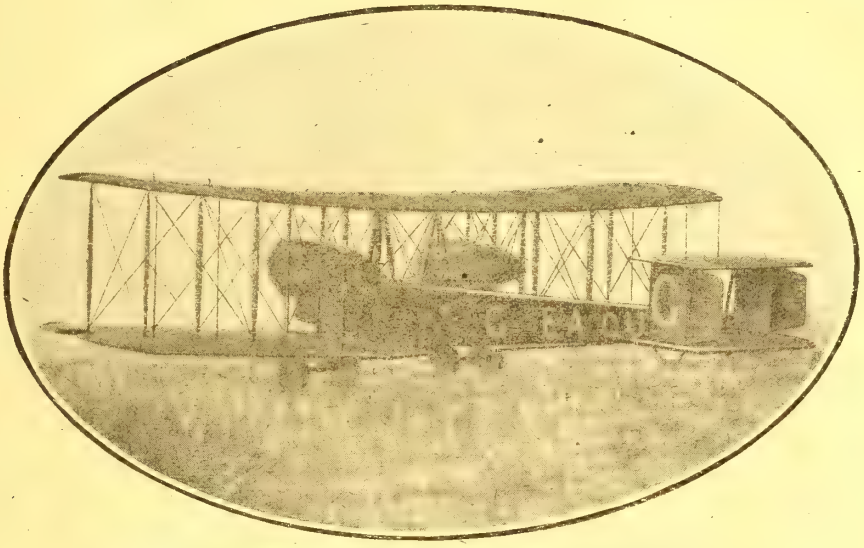

The Start from Hounslow. 9.10 a.m. November 12th, 1919.

The FIRST FLIGHT from ENGLAND to AUSTRALIA
Nov. 12th to Dec. 10th, 1919.
TIME—27 days, 20 hrs. 20 mins. DISTANCE—Approx. 11,500 miles.
THE WORLD'S LONGEST FLIGHT.

The FIRST DIRECT TRANS-ATLANTIC FLIGHT
June 14th—15th, 1919.
TIME—15 hrs. 57 mins. DISTANCE—1,890 miles.
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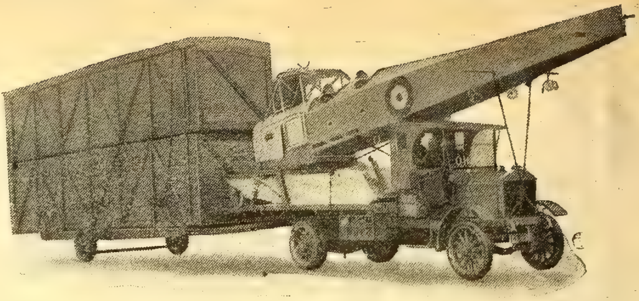
Aviation Department,
IMPERIAL COURT, BASIL ST., KNIGHTSBRIDGE, S.W.3.

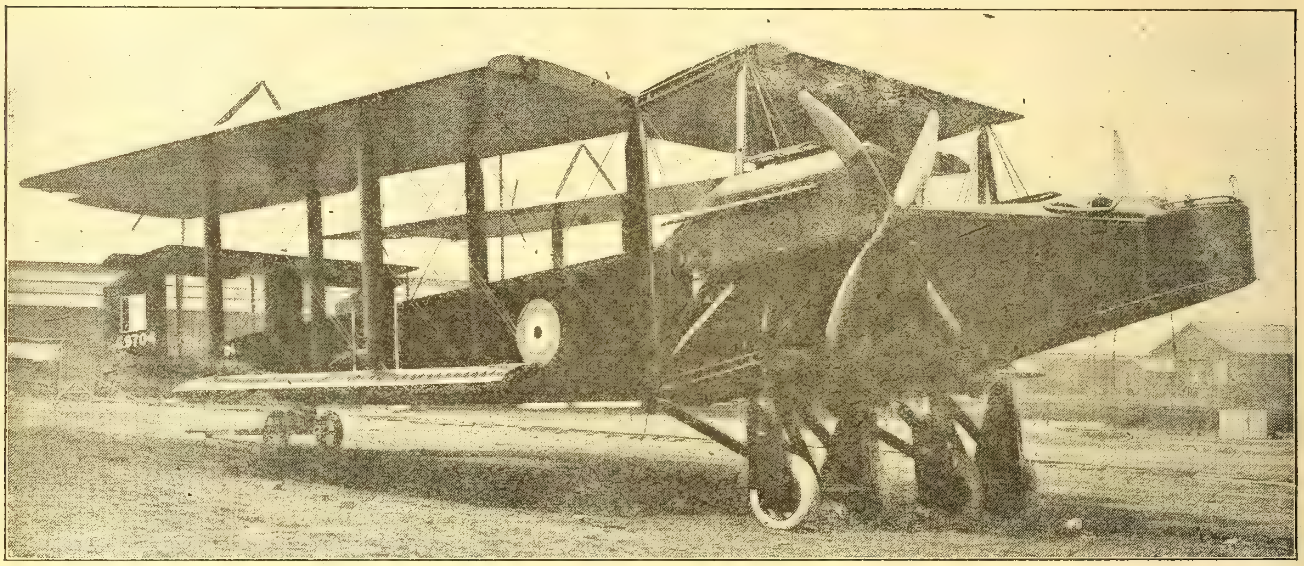
In addition their own designing department was responsible for at least one experimental machine which gave an excellent test performance.

With the advent of peace Mann, Egerton's have naturally reverted to their established business of electrical and automobile engineers. They do not, however, propose to abandon the results of their wartime aircraft experience. They are retaining their aircraft design department and are prepared, in response to *bona fide* inquiries, to submit designs and estimates for aeroplanes to meet Naval, Military, or Commercial requirements, but they do not propose to build machines except against definite orders.



A Mann, Egerton-built Seaplane packed for road transport.

THE HISTORY OF HANDLEY PAGE, LTD.



The twin-engined Handley Page Type O/400 Biplane with wings folded (two 375 Rolls-Royce "Eagle" engines).

After two years of experimental work in connection with early efforts to design a successful aeroplane, Mr. F. Handley Page started business as an aeronautical engineer, and on June 17th, 1909, founded the company which now bears his name.

Works were erected at Barking, covering about 10,000 feet, for the construction of aeroplanes—an ambitious venture at that uncertain period in the history of aviation.

The first machine to be produced by the company was a diminutive monoplane known as the "Bluebird," partly because of the form of its planes and partly because it was painted blue. This pioneer machine makes an interesting comparison with the Handley Page machines of the present day. The tail of the modern Handley Page is nearly twice the size of its tiny forerunner, and it could with ease carry in its great fuselage many machines of the dimensions of the "Bluebird."

The "Bluebird" provided a certain amount of useful data before it reduced itself to wreckage on the flying ground at Barking. Various other monoplanes were designed, and some survived the rigours of the experimental periods and others did not.

In 1909 an experimental biplane was built for an aviation enthusiast in Liverpool, and in the same year a Handley Page monoplane was exhibited at the Aero Show at the Olympia, London. The following year another type of monoplane was exhibited, fitted with a low-powered horizontal engine with two opposed cylinders.

Slowly by this process of evolution data was accumulated, which eventually resulted in the design of an aeroplane which can be described as the first really successful Handley Page machine.

This was a monoplane, fitted with a 50-h.p. Gnome engine. Its first pilot, the late Edward Petre, christened it the "Antiseptic," owing to the non-rusting paint which had been applied to it. The machine was exhibited at the Aero Show in London, and it performed, what were for those early days, very creditable flights, one of which was between Fairlop, near Ilford, to the works at Barking.

The span of the planes of this machine was 35 feet.

The span of the latest type four-engined Handley Page aeroplane is 100 feet.

The speed of this early monoplane was 50-60 miles an hour and its carrying capacity was confined to one man. To-day, a multi-engined Handley Page aeroplane can carry 30-40 passengers at a speed in the vicinity of 100 miles an hour.

The "Antiseptic" is still preserved intact, for unlike most efforts of pioneer aircraft designers it did not figure on the scrap-heap of "fallen hopes." The machine now hangs from the roof of the Handley Page works at Cricklewood, and it is one of Mr. Handley Page's most cherished possessions.

A larger machine, fitted with a 70-h.p. Gnome engine, was designed for the military aeroplane trials on Salisbury Plain in 1912.

The War Office then entrusted the firm with the making of machines of the B.E. type.

In 1912 the works were removed to Cricklewood. In the first instance the ground occupied was about five acres. The workshops have since been doubled in size.

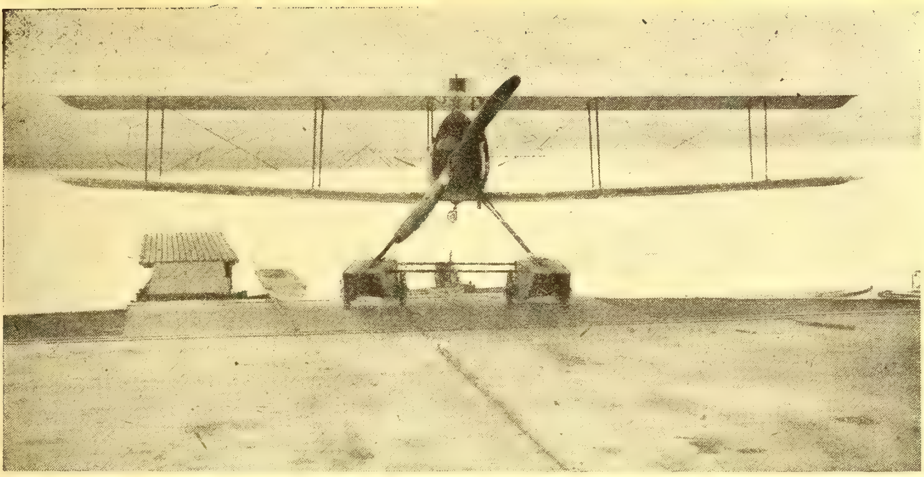
Despite the increasing activities of the firm, experimental work was still assiduously carried on. A biplane with a 110-h.p. Anzani radial engine was produced, which had a speed of 75 m.p.h. and made a good impression at flying meetings at Buxton and Hull.

Throughout these experimental periods work was always carried out on the lines of inherent safety. From that time until the present day the Handley Page firm has throughout adhered to its principle of great lift, safety and reliability rather than striving for sensational achievements in the direction of record breaking speeds and climbing performances.

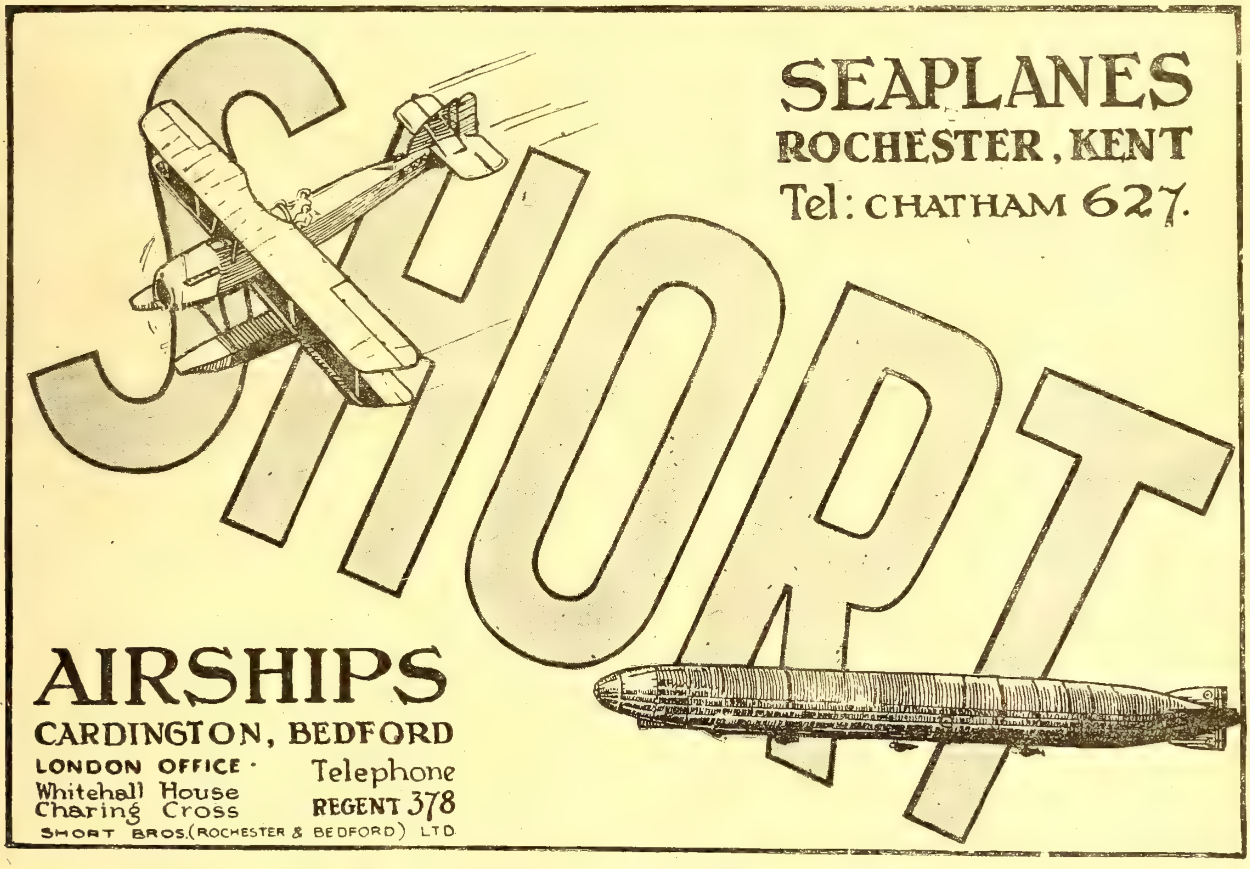
The latter, though useful assets in other spheres, are not calculated to advance the cause of commercial aviation.

A new type of biplane on an ambitious scale was being perfected when the war broke out. It was to have been equipped with a 200-h.p. Salmson motor. The firm was taken over by the British Admiralty in 1914, and since then the works have been engaged on the production of "giant" machines with multiple engines.

Lest it be supposed that the giant type is entirely a product of the war, it should be pointed out that the firm had conducted frequent experiments with big machines before Europe



"SPORTING" TYPE
SEAPLANE,
160 h.p. Beardmore
Engine,
Pilot
&
3 Passengers.



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"SPORTING" TYPE
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showing
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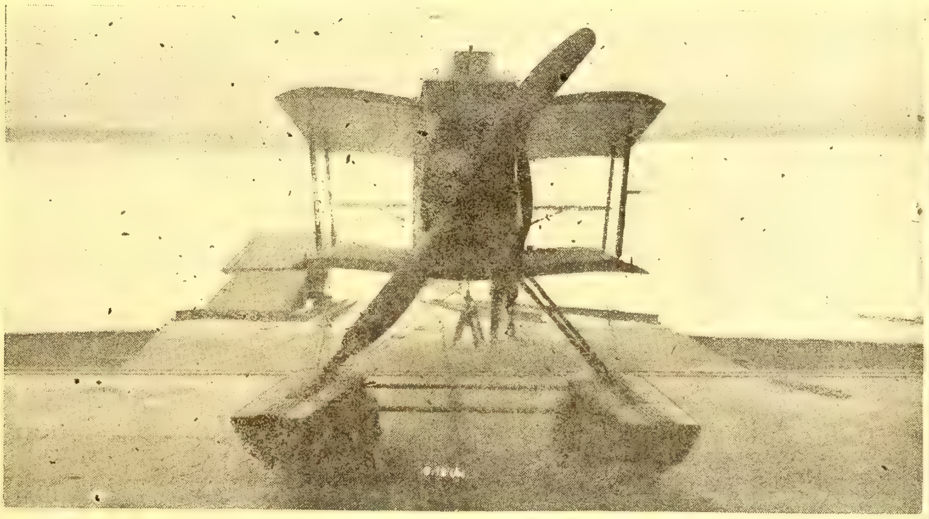
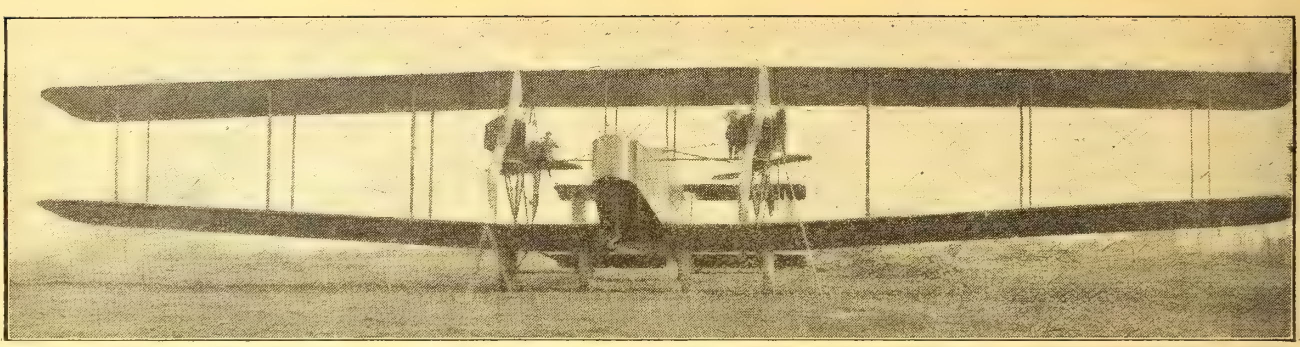




Front View of the Type V/1500 four-engined Handley Page Biplane.

was thrown into a world-wide conflict. The results of these researches were placed before the Admiralty, who requested the immediate construction of a large experimental machine as suggested by the specifications.

Bomb-dropping was also studied by the firm to some purpose. Most Admiralty machines, in the latter stages of the war, were fitted with the Handley Page bomb-dropping gear.

THE TWO-ENGINE HANDLEY PAGE—TYPE O/400.

British Night Bomber, 1916-1918, Inclusive.

Span.—100 feet, (with wings folded) 31 feet.
Length.—63 feet; height 23 feet.
Weight.—Empty, 8,000 lb.; fully loaded, 14,000 lb.
Useful load (passengers, mail or cargo).—Two tons.
Number of passengers accommodated.—Twelve comfortably (20 if necessary).
Engines.—Two 350-h.p. Rolls-Royce "Eagle" 12-cylinder.
Petrol consumption.—40-45 gallons per hour.
Petrol tank capacity.—300 gallons (two tanks of 150 gallons each).
Maximum air speed.—95 miles per hour.
Touring air speed.—85 miles per hour.
Can maintain flight on one engine only, though at reduced speed.

History and Performances.

1915.—First machine designed and built for the Admiralty, left the ground at 1.51 p.m., December 18th.

1916.—July: An O/400 took 21 passengers to a height of 7,000 feet over London.

August: First squadron formed by R.N.A.S. at Dunkirk. From then till Armistice all British heavy night-bombing was done by this machine, numbers of which in use on Western Front increased rapidly.

1917.—O/400 flew from London to Mudros, via Paris, Rome, and the Balkans. Thence it bombed Constantinople, Adrianople, and other Turkish and Bulgarian towns on many occasions.

1918.—With Independent Air Force carried out extensive night raids over Rhine towns.

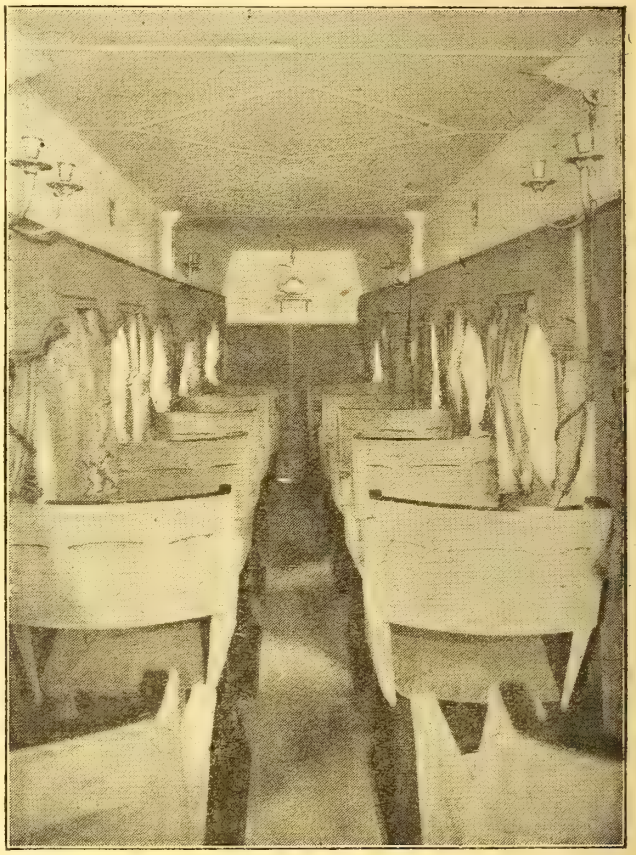
In our final offensive in Palestine, an O/400 played an important role, bombing H.Q.s and communication and doing the work of a squadron of smaller machines.

After the Armistice this machine returned to Cairo and flew from there to Delhi and Calcutta—the first machine to reach India by air.

1919.—Two military O/400s, H.M. Air Liners "Great Britain" and "Silver Star," fitted with saloon interiors, carried officials between London and the Peace Conference. One of them handled 700 passengers in a month of average winter weather.

Military O/400 performed the circuit of Britain—1,600 miles—in 30 hours' flying time.

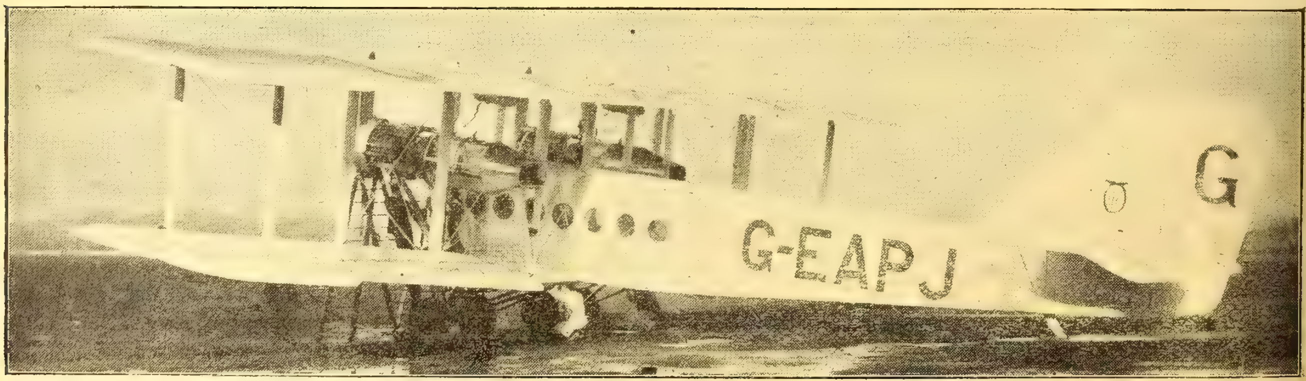
This type was used for the first delivery of newspapers by air in May, 1919.



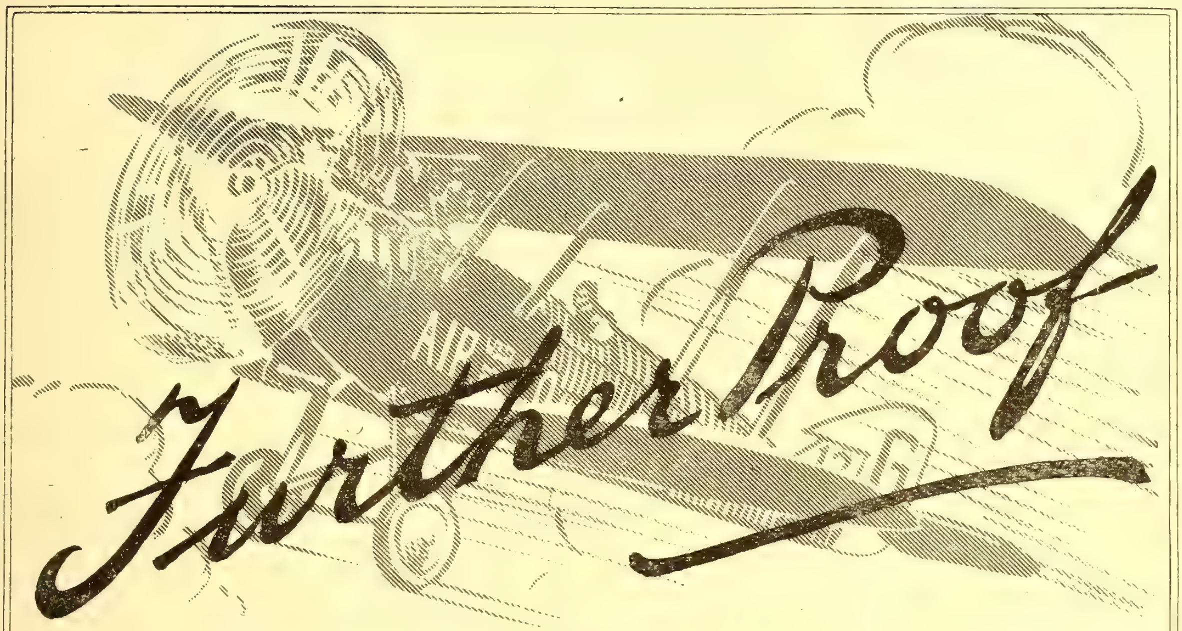
The Saloon of the W.8 Handley Page.

The Four-Engined Handley Page.

1918.—The four-engined Handley Page aeroplane was created for the purpose of bombing Berlin and designed



The new W.8 Handley Page Passenger-carrier (two 450-h.p. Napier engines).



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On Saturday 15th November a NAPIER engined AIRCO 9R aeroplane secured

18 BRITISH RECORDS

for speed, granted by the **Royal Aero Club.** All Records were obtained **in**

ONE day with
ONE machine and
ONE Pilot.

¶ Napier Aero Engines are on view at the Paris Aero Exhibition, in an Airco machine, Stands 19 & 21. Also in a Handley Page aeroplane, Stands 36 & 38.

Full particulars on application.

D. NAPIER & SON, LTD.,

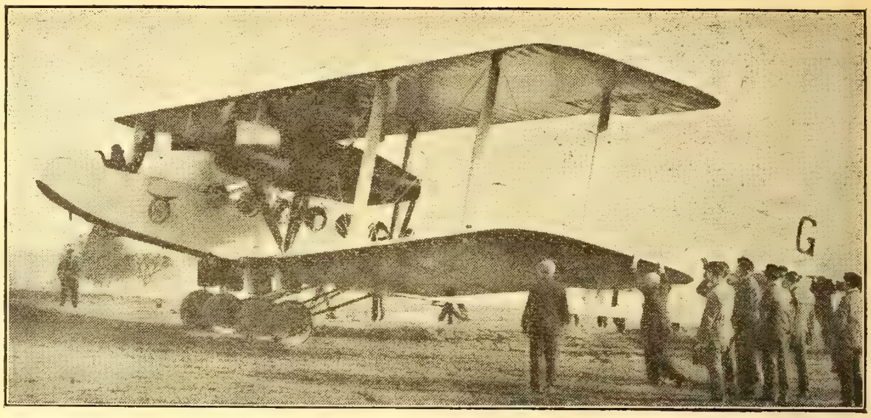
14, New Burlington Street, W.1. Works: ACTON, LONDON, W.3.

to carry a weight of five tons of passengers or cargo. The Armistice intervened before the weather was sufficiently favourable for a number of these machines to fly to the German capital.

A V/1500 on its first big trial flight flew from England to India, including one stretch of 800 miles overseas and another non-stop a stage of 1,00 miles, from Cairo to Baghdad.

In London this type lifted 41 passengers to a height of nearly 8,000 feet.

1919.—Long flights of 500-600 miles and more were accomplished by these Handley Pages, including non-stop journeys from Belfast to Sheffield, Belfast to Cromer, Belfast to Folkestone, and London to Biarritz.



The new W.8 Handley Page about to start for Paris.

A four-engined Handley Page was entered for the Atlantic flight and during a test flight travelled from Newfoundland to Parrsboro, N.S., a distance of 600 miles, in 12 hours.

A V/1500 established a record by making a non-stop flight of 12 hours with 12 passengers on board.

THE HANDLEY PAGE W.8.

After lengthy experiment the firm of Handley Page, Ltd., assisted by the experience gained in the production of bombing machines, have built a magnificent "flying saloon" capable of carrying 15-20 passengers or heavy loads of cargo up to 2 tons.

This machine, which will be at the Paris Show, is shown in attached illustration, and the general dimensions, etc., are given below :—

SPECIFICATION AND PERFORMANCE.

Type of Machine	Twin-engine biplane.
Engines	Two Napier "Lion."
Maximum available horse-power	450 h.p. each engine.
Cruising horse-power	350 h.p. each engine.

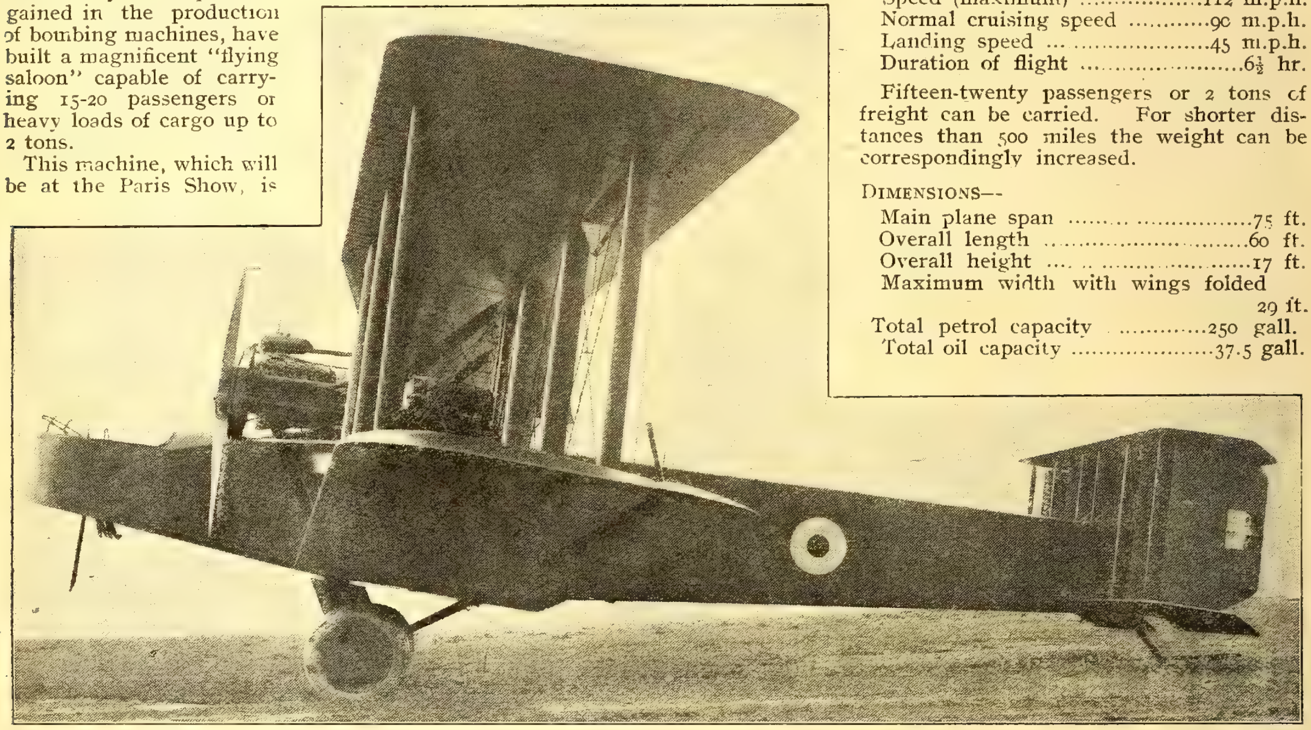
PERFORMANCE with normal maximum horse-power—

Speed (maximum)	112 m.p.h.
Normal cruising speed	90 m.p.h.
Landing speed	45 m.p.h.
Duration of flight	6½ hr.

Fifteen-twenty passengers or 2 tons of freight can be carried. For shorter distances than 500 miles the weight can be correspondingly increased.

DIMENSIONS—

Main plane span	75 ft.
Overall length	60 ft.
Overall height	17 ft.
Maximum width with wings folded	29 ft.
Total petrol capacity	250 gall.
Total oil capacity	37.5 gall.



The Handley Page four-engined V1500 Type Machine.

* * *

S. E. SAUNDERS, LTD.

During the war the firm of S. E. Saunders, Ltd., contributed a number of aeroplanes to the fighting services of the Crown, but as one would expect the greater portion of their output consisted of seaplanes.

These were almost, if not quite, entirely of the flying boat type, and with Mr. Saunders' unequalled experience of the building of light sea-going craft it is not surprising to learn that Saunders' built flying-boats had the best of reputations as staunch and seaworthy craft.

During the war period Mr. Saunders developed and brought to perfection the type of plywood construction known as "Consuta"—a modification of the original Saunders' sewn planking for racing boats—which was successfully applied to flying-boat hulls.

At the present time Mr. Saunders is busily engaged upon the design of a flying-boat amphibian machine from which it is safe to expect excellent results.

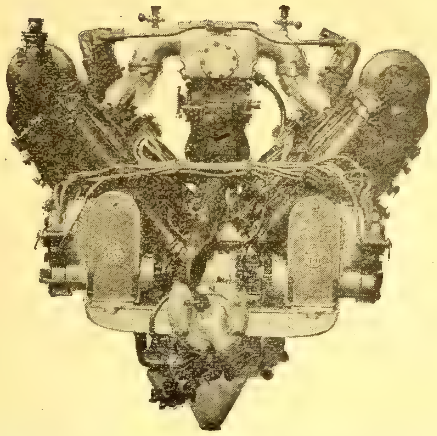
At the same time, in collaboration with Vickers Ltd., the firm is designing and building the hulls for superstructures built by Vickers.

AN ITALIAN VICKERS ACHIEVEMENT.

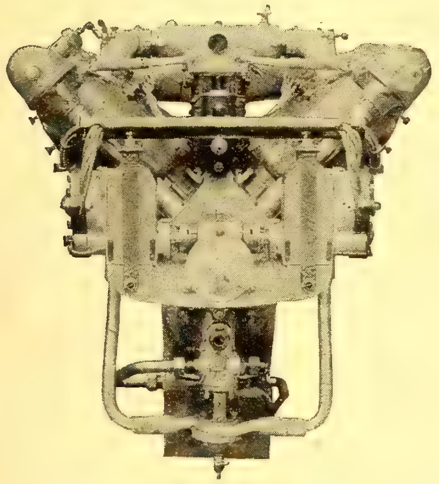
The Italian correspondent of THE AEROPLANE supplies the following notes on the recent developments by the Italian relation of the famous firm of Vickers, Ltd.

THE MARCHETTI-VICKERS-TERNI RECORDS.

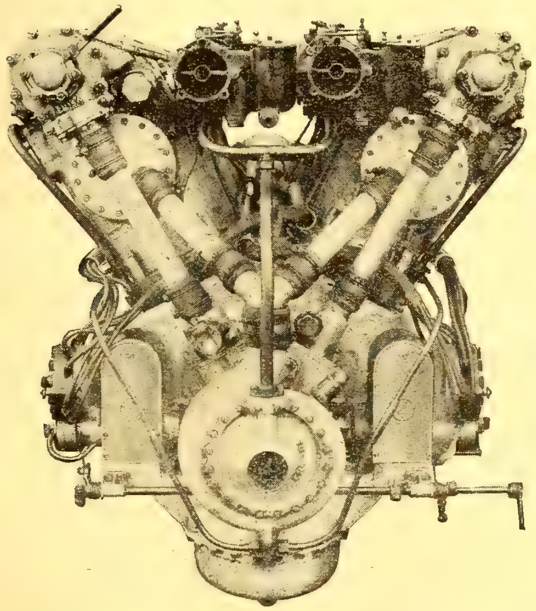
More details are now known about the climbing and speed records claimed for this biplane at Rome. The climb to 5,000 metres in 11 minutes and to 6,000 in 15 minutes 20 seconds and the 274 kilometres 220 metres an hour over a straight kilometer in both directions are correct. The machine is not appreciably different from the type of the former record, indeed is mostly the same material. It is, barring some of the ribs, a metal-built machine all through, has a single strut each side, no ailerons or fixed horizontal tailplane and a very complete warping device. The motor is the usual Spa, but of 250-h.p., and the lowest flying speed is 85 k. per hour. Other measurements are : span 8.40, length 5.50 metres, and flying weight 900 kilograms.



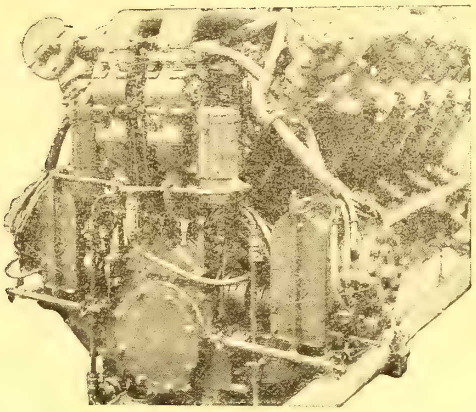
200 H.P. 8-cylinder Sunbeam "ARAB" engine fitted with type AV8s B.T.H. Magnetos.



200 H.P. 8-cylinder Wolseley Hispano-Suiza "VIPER" engine fitted with type AV8s B.T.H. Magnetos.



650 H.P. 12-cylinder Siddeley-Deasy "TIGER" engine fitted with type AV12s B.T.H. Magnetos.



275 H.P. 12-cylinder Rolls-Royce "FALCON" engine fitted with type AV12s B.T.H. Magnetos.

A few representative types of Aero Engines with

B
T-H

MAGNETOS

These Magnetos are noted for their high quality and reliability in service.

The British Thomson-Houston Co., Ltd.,
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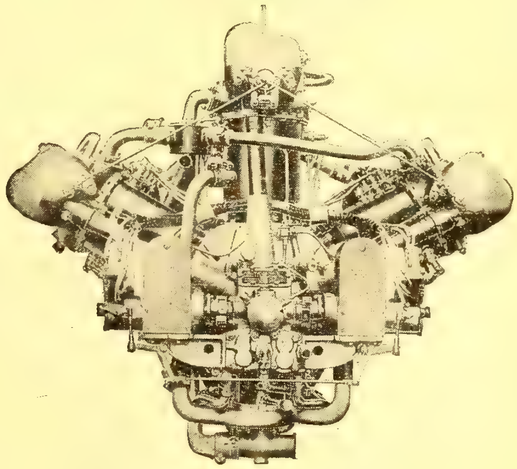
Member of the British Ignition Apparatus Association.



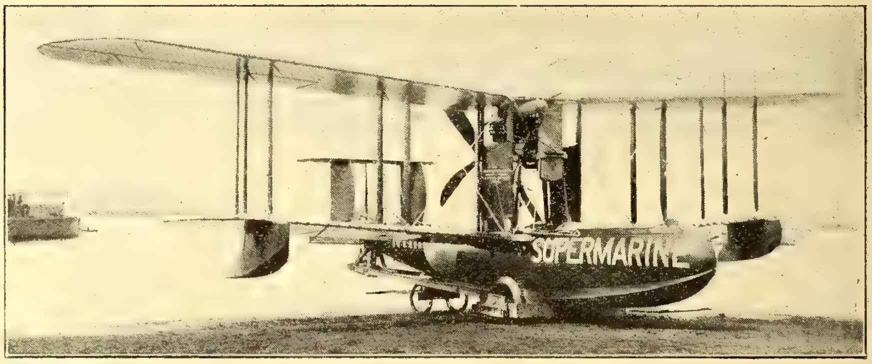
450 H.P. 12-cylinder NAPIER engine, fitted with type AV12s B.T.H. Magnetos.

THE SUPERMARINE AVIATION WORKS, LTD.

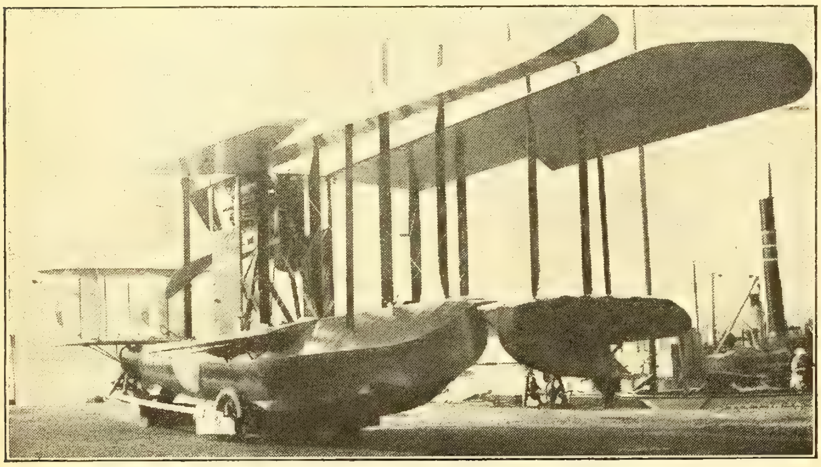
The Supermarine Aviation Works, originally founded in 1912 as Pemberton-Billing, Ltd., were laid down specially for the production of aircraft of the flying boat type.

During the earlier part of the war their energies were to some extent diverted to the building of aircraft of other types, but the firm has more recently reverted to its original purpose, and is now exclusively concerned with flying boats and accessories.

During the war the company produced a two-seater reconnaissance machine of this type which, equipped with the 200-h.p. Hispano-Suiza, put up a remarkably fine performance, and the Supermarine "Baby"—a single-seat fighter flying boat with a very high speed.


The Supermarine four-seater "Channel" Type Flying Boat (160-h.p. Beardmore engine).

The first type, modified in a number of respects and fitted with the 160-h.p. Beardmore engine, is to-day known as the "Channel" type, and is described below, together with other products of the firm

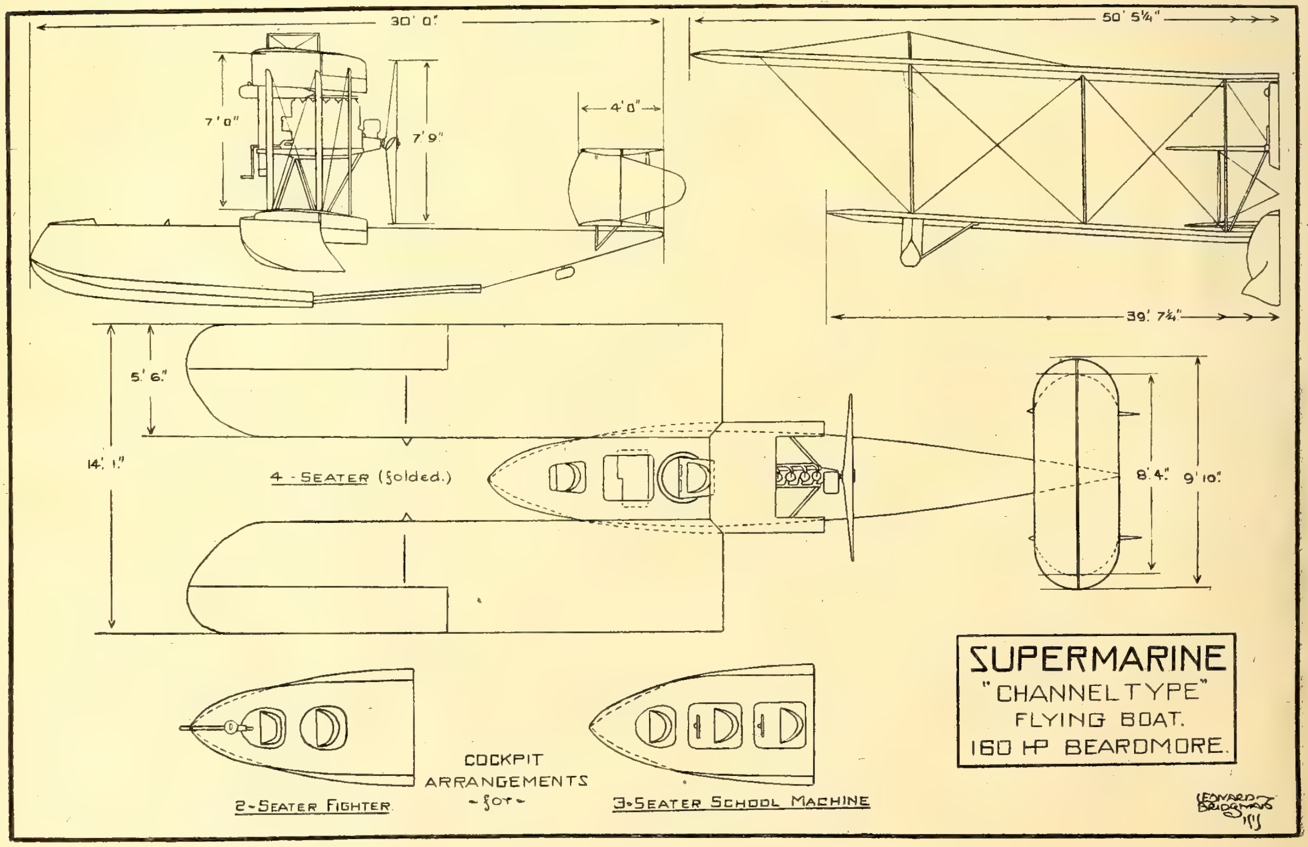

The Supermarine "Channel" Type Flying Boat with wings folded.

THE SUPERMARINE "CHANNEL" TYPE.

This machine is a single-engined flying boat of moderate size, fitted with folding wings, and a hull built and designed by boat designers, and not with a fuselage covered with threeply or similar makeshift arrangement.

The engine is carried beneath the centre section and drives a propeller direct. Fuel tanks are carried within the hull, and the accommodation for the crew is ahead of the main planes, the exact arrangement of the seats varying with the purpose for which the particular boat is intended. These are shown in a drawing appended hereto.

Three types of this machine have been standardised, viz., two-seater fighter, three-seater school machine, and a four-



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Extract from letter from Sydney, N.S.W.

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Many leading Aircraft Manufacturers are already adopting the BEARDMORE as STANDARD POST-WAR POWER UNIT.

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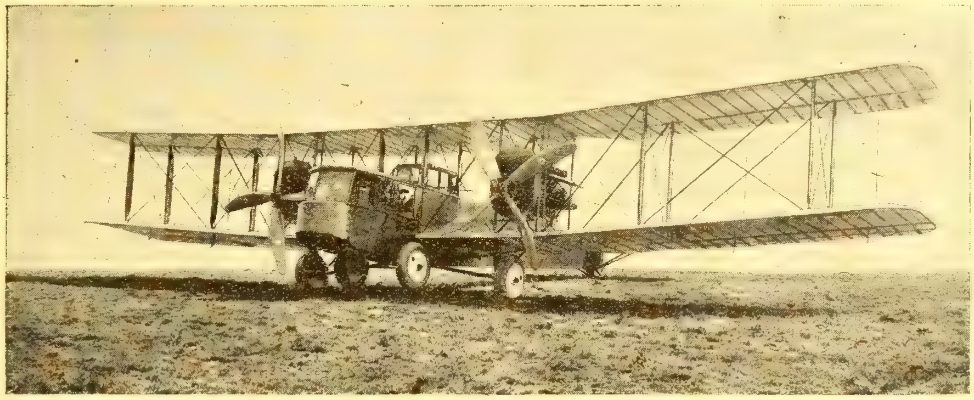

THE

GRAHAME-WHITE—ROLLS-ROYCE

AERO LIMOUSINE.

THIS machine, which can be seen in flight at the London Aerodrome, Hendon, has been designed specially for pleasure and commerce. It is not an adapted War machine, but is a specially constructed Limousine, fitted with two Rolls-Royce engines, luxuriously upholstered, and containing an electrically heated carpet. There is ample accommodation for 4 passengers. The pilot, with whom communication is maintained by speaking-tube, sits in a separate compartment above, and at the rear of, the passengers' quarters.

There is also the Grahame White—Rolls-Royce Aero Limousine (9 seater), which is of the same construction as the 5-seater, with slight variations. The front cabin has been enlarged to take 6 passengers and the pilot. Moved farther back, between the pilot and planes, a special cabin has been placed to afford comfortable accommodation for 2 additional passengers or luggage.

For those requiring a sporting machine there is the Grahame-White Bantam Single-seater, fitted with 80 h.p. Le Rhone Engine. Speed 100 miles per hour.

Illustrated catalogues and further information regarding the above and other types of machines may be obtained upon application to:

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The London Aerodrome, Hendon, N.W.9.
'Phone—Kingsbury 120 (8 lines).

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12, Regent Street, Pall Mall, S.W.1.
'Phone—Regent 2084, 29.

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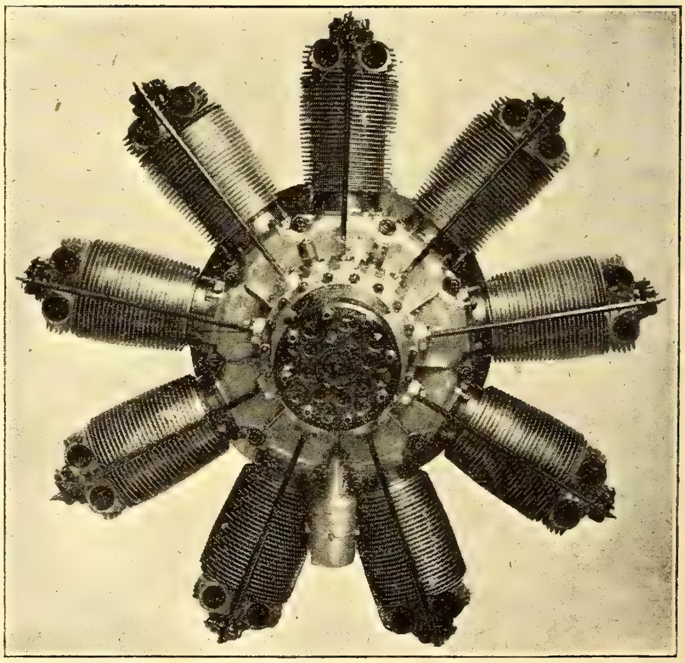

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To-day we recognise that aircraft builders have more time to manipulate their own components, but they need steel tubing, and we supply the very best. Further, let our war experience assist you in this matter of steel tubing and steel presswork. We may be able to save you money, because we have the tools for many components.

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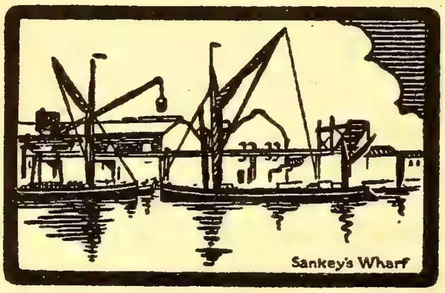

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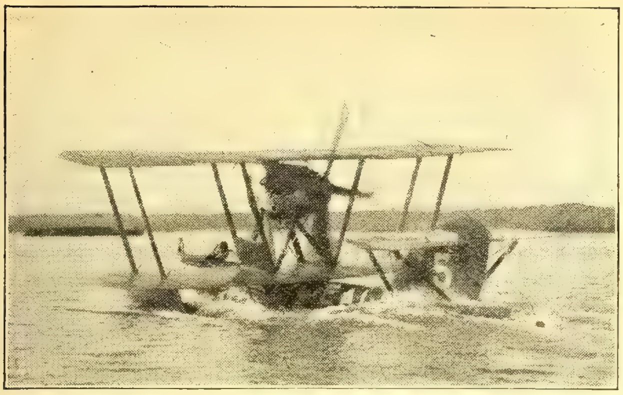


The Supermarine "Sea Lion" (450-h.p. Napier engine).

seater passenger machine, which has been tested and tried out efficiently during the whole of the varying weather conditions of the past year with highly satisfactory results.

As a fighter the machine carries pilot, observer, two guns, wireless, and fuel for five hours at 100 m.p.h.

As a school machine it is arranged to carry two pupils at a time—one at the dual control actually learning to fly, and the second as a spectator of his efforts, thus gaining experience of being in the air and a notion of what is expected of him later.

As a four-seater passenger machine it is claimed that this is one of the most serviceable commercial machines in the world. It carries 540 lb. of useful load for a consumption of one gallon of petrol to every eight miles.

This type was used during the past summer season to inaugurate the first passenger service in flying boats that has ever been established.

The season was most successful, and many passengers were carried at Bournemouth, Southsea, and at the Isle of Wight summer resorts. Trips were also made to Land's End, Plymouth, Weymouth, Newhaven, and Dover. During the railway strike the first port to port service, viz., from Southampton to Le Havre, was established very successfully with these machines, and stranded passengers on each side of the Channel were enabled to make rapid, safe and comfortable crossings.

THE SUPERMARINE "SEA LION."

This machine, which is said to be the fastest flying boat in the world, is a small, fast, single-seater, designed primarily for war purposes.

With the Napier 450 h.p. engine, 2½ hours' supply of fuel, and a load of 140 lb. of guns and ammunition, the speed is 147 miles per hour. The hull is guaranteed to stand up to practically any weather, and the machine itself may be looped, rolled, spun, or put through any of the manœuvres demanded by aerial fighting.

PASSENGER AND MAIL SERVICE TRIPLANE "DOLPHIN."

In addition to these machines the Supermarine Works have designed a large type of flying boat of 1,500 h.p. This machine has been designed for 24 passengers, 5 crew, 1¼ tons of mails. It will be capable of going to sea in practically any weather conditions. Accommodation will be most comfortable and luxurious; the boat will be unsinkable, owing to special arrangement of water-tight bulkheads.

A larger type of machine is now going through the firm's design section, of 3,000 h.p. It will be in many respects of a progressive nature, as well as embodying the well-known principles of the Supermarine flying boats.

Over and above the actual flying boats, the Supermarine Works have undertaken the manufacture of a special seaplane tender, in the form of a 14-knot 35 ft. motor-boat.

It is capable of weathering out heavy sea-going conditions and is suitable for towing. It has large carrying capacity for transfer of passengers, and large petrol tanks and pumps for re-fuelling machines while collecting mails, passengers, and cargo. Special derrick arrangement can be installed, facilitating removal of mail-bags, etc. Fitted with wireless and machine-gun if required, it is exceptionally quick on the helm and a first-class, well-designed boat.

~~~

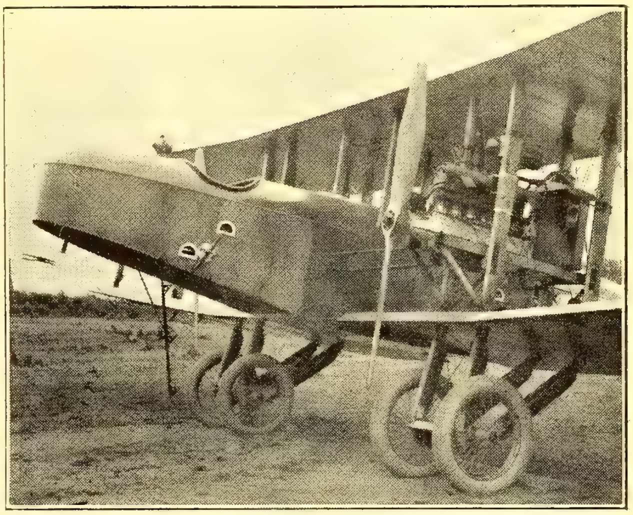
THE CENTRAL AIRCRAFT CO.

The Central Aircraft Co. have been engaged in the aircraft industry since 1909, and by genuine hard work have earned a name that is respected both for the design and building of aircraft and also as a school of extremely high efficiency.

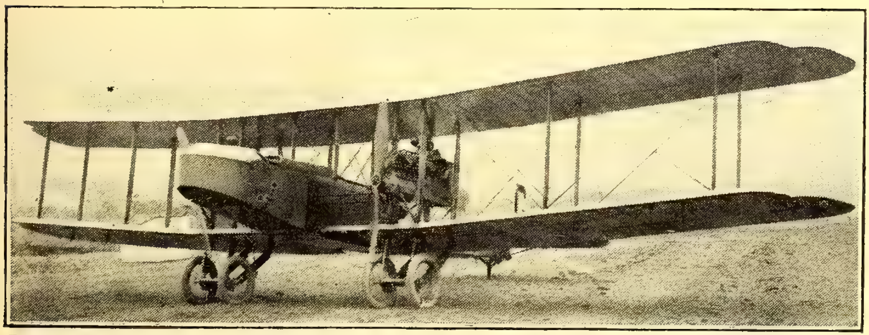
The School of Aviation has been thoroughly reorganised since the war, and instruction is now given on training machines of the firm's design by a staff of fully qualified instructors. In addition to practical flying, a course of theoretical work is given conducted on entirely new and modern lines.

The range of machines that they are producting are the "Centaur 2a," a 320 h.p. twin-engined nine-seater biplane; the "Centaur 2b," a 460 h.p. twin-engined nine-seater seabiplane; the "Centaur 4," a 80 h.p. or 100 h.p. training biplane; the "Centaur 5," a two- or four-seater sporting or touring biplane; and the "Centaur 5a," which is a seaplane version of the "Centaur 5."

The "Centaur 2a" is a twin-engined biplane, and has been designed as a nine-passenger or commercial machine. It is fitted with two 160 h.p. Beardmore engines and follows usual practice in general arrangement. Accommodation is provided for two pilots and seven passengers, who are seated in an electrically warmed cabin which is fitted with windows of "Triplex" safety glass, or, as an alternative, by taking out the seats, accommodation can be found for 15 cwt. of mails or goods. Its general appearance can be gathered from the photograph. Folding wings are fitted, which enable the machine to be stored in quite a small hangar



The Pilot's seat and one power plant of the Central Aircraft Co.'s "Centaur 2a."



Three-quarter Front View of the "Centaur 2a" (two 160-h.p. Beardmore engines).

SPECIFICATION.

Type of machine	Twin-engined biplane
Type number of machine	"Centaur 2a"
Purpose	Commercial
Span	63 ft.
Width folded	30 ft.
Overall length	39 ft.
Surface of wings	900 sq. ft.
Engine type and h.p.	Two 160 h.p. Beardmore
Weight empty	3,160 lb.
Load per sq. ft.	6 lb.
Weight per h.p.	16.9 lb.
~~~

Tank capacity in hours	3 hr.
Tank capacity in gallons	75 gall.
PERFORMANCE—	
Speed low down	90 m.p.h.
Landing speed	40 m.p.h.
Disposable load apart from fuel	2,240 lb.
Total weight of machine loaded	5,400 lb.

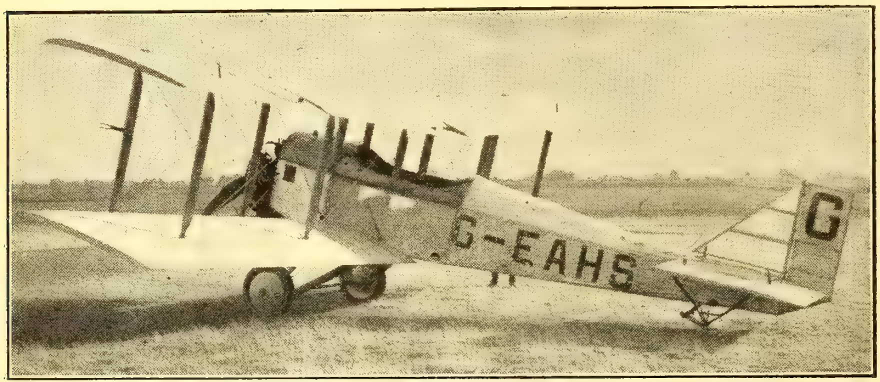
The Central Aircraft Co.'s "Centaur 2a" twin-engine machine.

THE "CENTAUR 2B."

The "Centaur 2b" is a similar machine to the 2a, but is fitted with twin floats in lieu of the ordinary undercarriage, together with a tail float and water-rudder and two small cylindrical wing-tip floats. The total weight is somewhat heavier in view of the additional weight of the flotation gear and the larger and higher-powered engines fitted. In all other respects it is similar to the 2a.

SPECIFICATION.

Type of machine	Twin-engined biplane.
Name or type number of machine	"Centaur 2b."
Purpose for which intended	Commercial.
Span	63 ft. 6 in.
Width with wings folded	27 ft.
Overall length	39 ft. 6 in.
Total surface of wings	895 sq. ft.
Engine type and h.p.	two 230 h.p. Siddeley "Puma."
Weight of machine empty	4,240 lb.
Load per sq. ft.	7.3 lb.
Weight per h.p.	14.1 lb.
Tank capacity in hours	3 hr.
Tank capacity in gallons	81 gall.
PERFORMANCE—	
Speed low down	100 m.p.h.
Landing speed	45 m.p.h.
Disposable load apart from fuel	2,260 lb.
Total weight of machine loaded	6,500 lb.

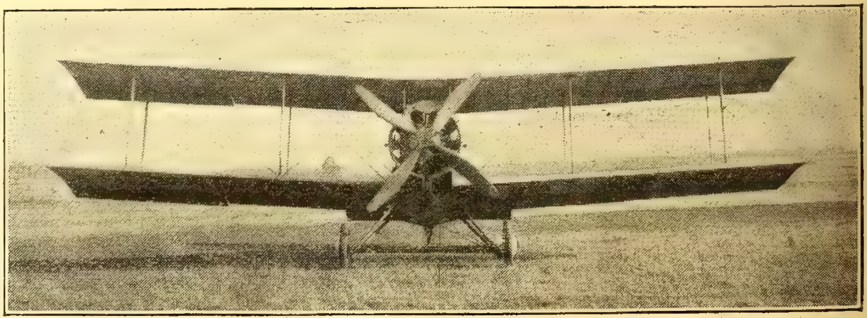

The Central Aircraft Co.'s "Centaur 4" (100-h.p. Anzani engine).

THE "CENTAUR 4."

The "Centaur 4" has been specially designed and adapted for school work, and as such has been produced with a view to low cost of maintenance and ease of repair. To this end a large number of parts are made interchangeable. All interplane struts are identical, front and rear struts being of the same length and dimensions throughout. Top and bottom planes are exactly alike and may be used in either position as occasion demands. The same remark applies to rudder and elevators. This, coupled with the fact that the machine is easy to fly and possesses a very low landing speed, makes it ideal for instructional purposes. A large amount of work has been put in on this machine and the school have done some exceptionally rapid tuition with it. Either an 80 h.p. Renault or a 100 h.p. Anzani engine can be fitted.

SPECIFICATION.

Type of machine,	Two-seater dual-control biplane.
Name or type number of machine,	"Centaur 4."
Purpose for which intended	Training.
Span	34 ft. 3 in.
Overall length	24 ft. 8 in.
Total surface of wings	331 sq. ft.
Engine type and h.p.,	Renault 80 h.p. or Anzani 100 h.p.
Weight of machine empty	900 lb.
Load per sq. ft.	4.2 lb.
Weight per h.p.	18.65 lb.
PERFORMANCE—	
Speed low down	75 m.p.h.
Landing speed	32 m.p.h.
Disposable load apart from fuel	500 lb.
Total weight of machine loaded	1,400 lb.


Front View of the "Centaur 4."

THE "CENTAUR 5."

"Centaur 5" has been designed as a sporting and touring machine, and is fitted with side-by-side seats and folding wings. Simplicity and strength are the outstanding features of the design, and the fact that it possesses a low landing speed makes it extremely suitable for a private owner. In the "Centaur 5a" the ordinary land undercarriage is replaced by a single central float, together with wing-tip and tail floats. Arrangements can be made whereby either form of alighting gear can be fitted to the same machine with the minimum of trouble, thus providing a most serviceable and economical double-purpose aeroplane.

SPECIFICATION.

Type of machine	Two or four seater tractor biplane.
Name or type number of machine	"Centaur 5" or "5a."
Purpose for which intended,	Sporting, touring, etc.
Span	36 ft. 6 in.
Overall length	26 ft. 6 in.
Total surface of wings	396 sq. ft.
Engine type and h.p.,	100-110 h.p. Anzani
Weight of machine empty	1,200 lb.
Load per sq. ft.	4.55 lb.
Weight per h.p.	18 lb.
Tank capacity in hours	3 hr.
Tank capacity in gallons	24 gall.
PERFORMANCE—	
Speed low down	80 m.p.h.
Landing speed	30 m.p.h.
Disposable load apart from fuel,	600 lb.
Total weight of machine loaded,	1,800 lb.

AIRCRAFT TRANSPORT AND TRAVEL, LTD.

The Aircraft Transport and Travel Company's exhibit at the Paris Show will be staged in conjunction with that of the Compagnie Generale Transaerienne, the French company in association with which Aircraft Transport and Travel are operating the London-Paris mail, passenger, and parcels service.

A feature of the Aircraft Transport and Travel exhibit will be a series of very beautifully reproduced coloured photographs, illustrating scenes taken during the operation of the London-Paris service, and also the Airco machines which are used daily on this express route.

In addition to the photographs of machines, there will be models of the new Airco 18 aeroplane, which is to come into use on the London-Paris service in the spring; the five-seater Airco 16, which has already done such good service between London and Paris; and also of the Airco 9 and Airco 4a.

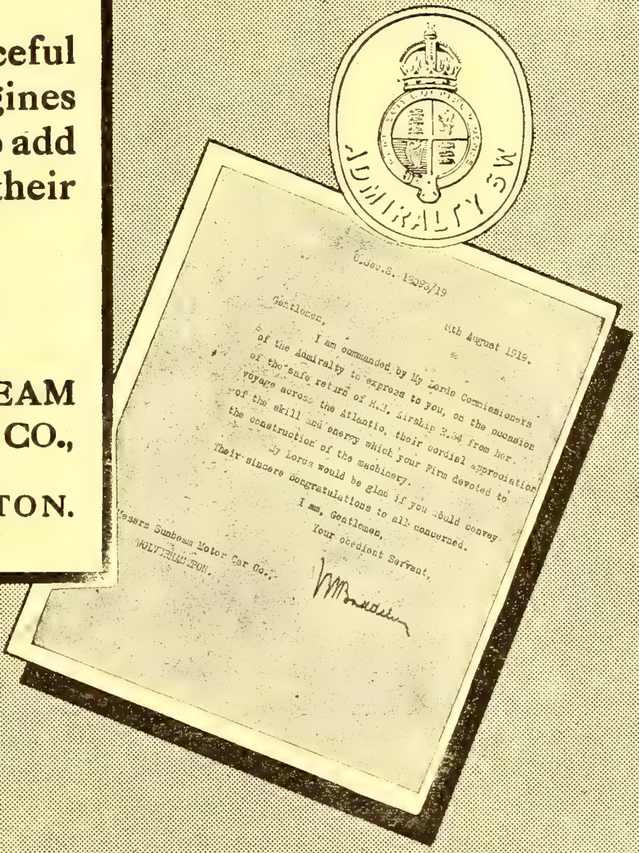
SUNBEAM-COATALEN AIRCRAFT ENGINES

contributed in no small measure to the aerial supremacy which was largely responsible for the Victory which crowned the Allied arms.

And in peaceful times, these Engines will continue to add to the fame of their name.

■ ■
■

THE SUNBEAM MOTOR CAR CO.,
LTD.,
WOLVERHAMPTON.



C.Sec.S. 12293/19

Gentlemen,

8th August 1919.

I am commanded by My Lords Commissioners of the Admiralty to express to you, on the occasion of the safe return of H.M. Airship R.34 from her voyage across the Atlantic, their cordial appreciation of the skill and energy which your Firm devoted to the construction of the machinery.

My Lords would be glad if you would convey Their sincere congratulations to all concerned.

I am, Gentlemen,
Your obedient Servant,

Messrs Sunbeam Motor Car Co.,
WOLVERHAMPTON.

A.B.C. ENGINES.

Walton Motors, Ltd., the manufacturers of the A.B.C. aero engines, have now decided to concentrate on the production of two types of aero engine for their post-war programme. These are the "Dragonfly" I.A. of 340 h.p. and the "Wasp" II, with a normal output of 160 h.p.

In general design the engines are alike, both are single-crank radial engines, the "Dragonfly" with nine and the "Wasp" seven cylinders.

The cylinders are of steel, turned from a single ingot, and with the cylinder heads integral with the barrel. The radiating fins are copper plated, in the well-known A.B.C. style, to assist in the dissipation of heat therefrom.

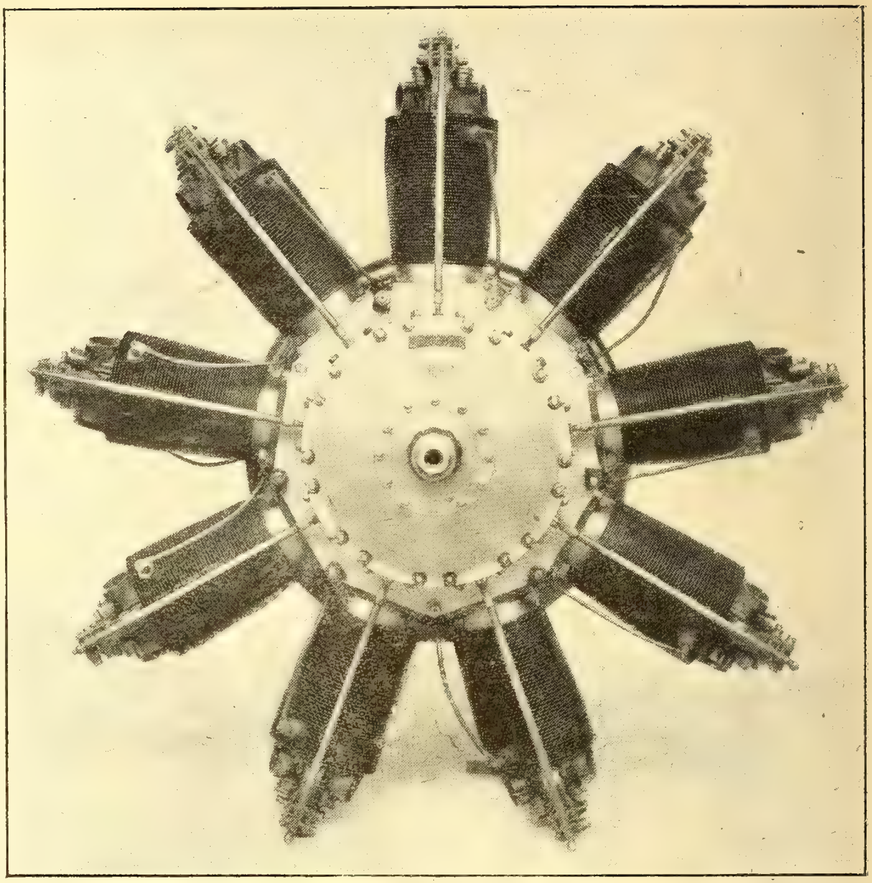
Each cylinder is equipped with three overhead valves, two exhaust and one inlet, operated through rocking levers and push-rods by a cam ring concentric with the crankshaft, which has four cams in the case of the "Dragonfly" and three in that of the "Wasp."

All bearings throughout are of either the ball or roller type, and in consequence very little oil is required for lubrication and there is no need for a high-pressure lubrication system.

The following data concerning performances of these engines in war aircraft serve as an indication of their capabilities :—

Performance of A.B.C. "Dragonfly" I.A. engine fitted to a warplane carrying guns and other military load :—

Height.	Time in min.	M.P.H.
3,000	1¼	156
6,000	2¾	150
10,000	4 4-5	144
15,000	8 2-5	143
18,000	10¾	141

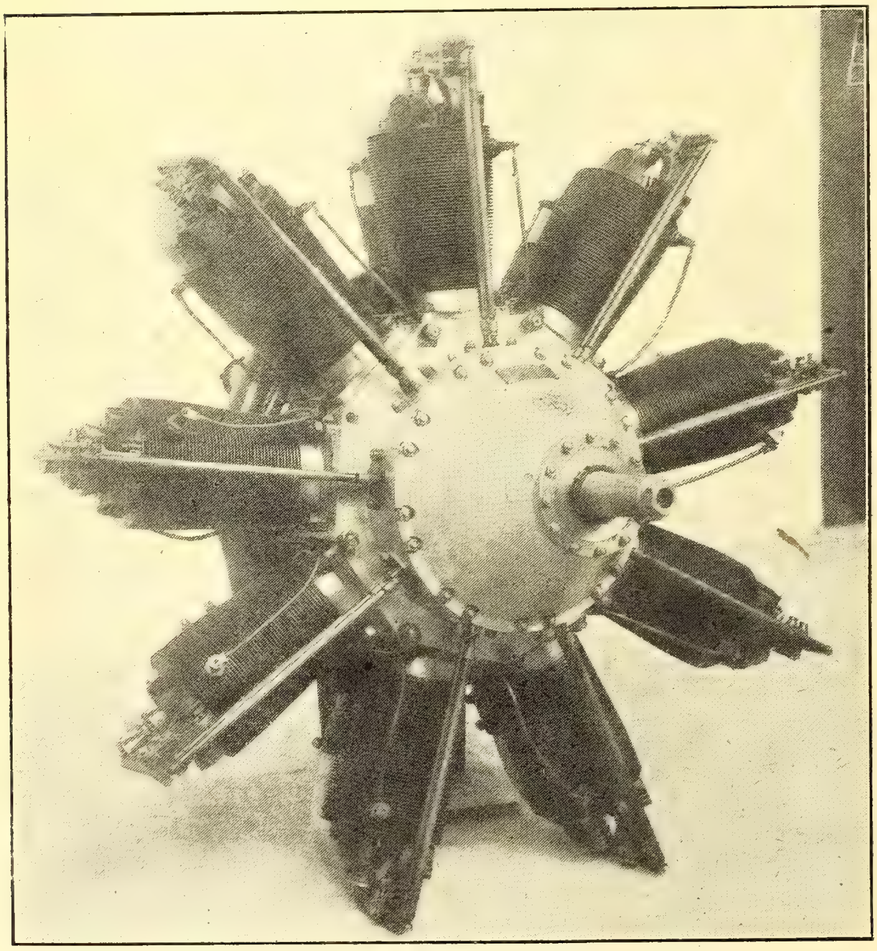


The Airscrew End of the A.B.C. "Dragonfly," Mark I.A. 340 h.p. engine.

A height of 28,000 ft. corrected was obtained with this machine, the climb not being continued farther owing to lack of oxygen for the pilot.

Performance of A.B.C. "Wasp" I, 170 b.h.p. engine fitted to a B.A.T. Scout :—

Height.	Time in min.	M.P.H.
3,000	1½	—
10,000	5¼	134
14,000	11¼	129



Another View of the A.B.C. "Dragonfly" Mark I.A.

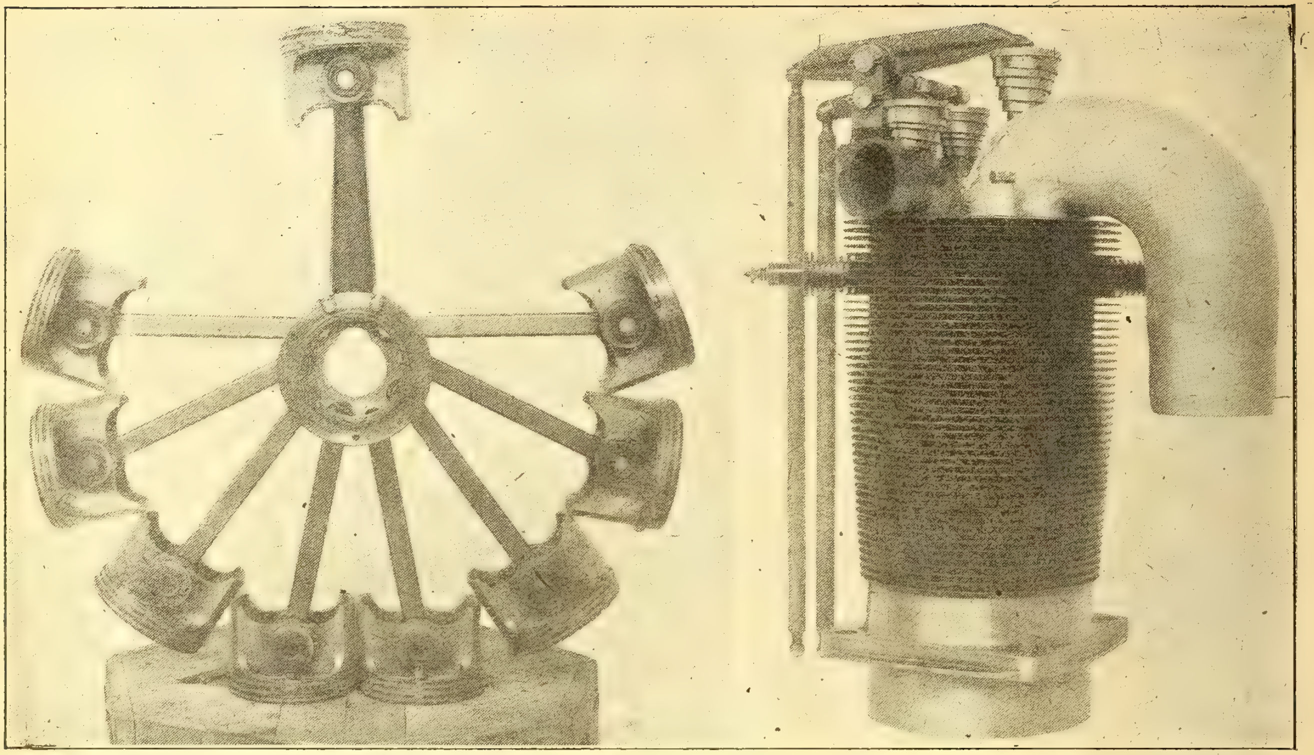
THE A.B.C. "DRAGONFLY" I.A.

Specification.

Type of engine. 9-cylinder static radial.
Type of cylinder......Steel, fins A.B.C. copper coated, 3 overhead valves, 2 exhaust and 1 inlet.
Bore ....5½ in., equals 139.7 mm.
Stroke ....6½ in., equals 165.1 mm.
Normal b.h.p 340
Rotation ...Anti-clock facing propeller.
Normal speed ....1,650 r.p.m.
Lubrication—
2 rotary plunger pumps, 1 feeding through hollow camshaft to crankpin, centrifugal feed to big end and thence splash, 1 feeding to nose, dropping into cam and forming a permanent sump for gears in bottom of nose.
Oil recommended, Wakefield Castrol R.
Oil consumption ....7 pints per hour.
Oil consumption per b.h.p. hour, 0.021 pints.
Carburetters ...two A.B.C. carburetters.
Petrol consumption, 56 pints per b.h.p. hour.
Magnetos, two A.K.9 magnetos, 4 spark.
Speed of magneto ......1⅛ engine speed.

Telephone: WILLESDEN 2455.

Telegrams: "NIEUSCOUT, CRICKLE, LONDON."



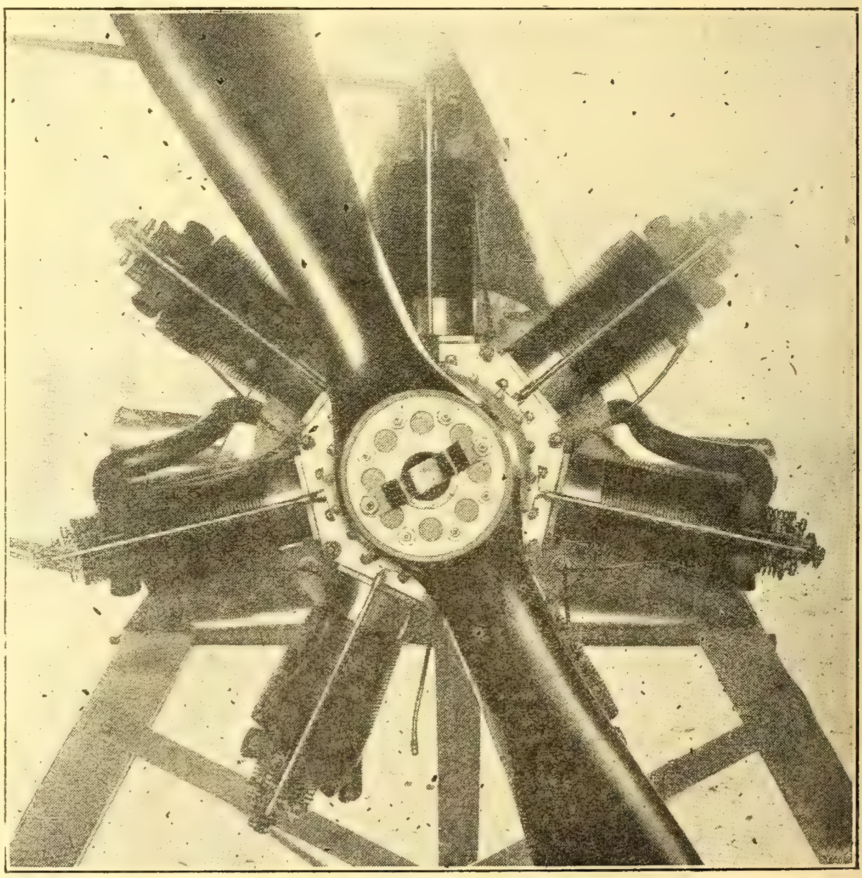
The Piston and Connecting-rod Assembly, and one Cylinder complete of the A.B.C. "Dragonfly" engine.

Mag. rotates ....Clockwise facing driving end of armature.
Rev. counter rotates ....Anti-clock facing driving shaft.
Speed of rev. counter drive ....¼ engine speed.
Weight of engine, including airscrew boss, but without oil or fuel ...600 lb.
Weight of engine per B.H.P. ...1.765 lb.

THE A.B.C. "WASP II."

Specification.

Type of engine...7-Cylinder Static Radial
Type of cylinder .. Steel, fins A.B.C. copper coated, 3 overhead valves, 2 exhaust and 1 inlet.
Bore ....4¾ in.
Stroke ....6¼ in.
Maximum B.H.P. 200 ......(normal B.H.P. 160).
Rotation ...Anti-clock facing propeller.
Maximum speed .... 1,850 r.p.m. (normal speed 1,650).
Lubrication—
Two rotary plunger pumps, 1 feeding through hollow camshaft to crankpin, centrifugal feed to big end and thence splash, 1 feeding to nose, dropping onto cam and forming a permanent sump for gears in bottom of nose.
Oil recommended...Wakefield Castrol R.
Oil consumption ......6 pints per hour.
Oil consumption per B.H.P. hour... ...0.03 pints (based on max. B.H.P.).
Carburetters ....Two A.B.C. 48 mm.
Petrol consumption ....0.56 pints per B.H.P. hour.
Magnetos ......Two P.L. 7 type, 2 spark.
Speed of magnetos ......1¾ engine speed.
Mag. rotates ....Clockwise facing driving end of armature.
Rev. counter rotates ....Anti-clock facing driving shaft.
Speed of rev. counter drive ... ¼ engine speed.
Weight of engine, including airscrew boss, but without oil or fuel ....350 lb.
Weight of engine per B.H.P. ....1.75 lb.



The "Wasp II" A.B.C. engine of 160-200 h.p.

Firth's
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"SPEEDICUT" HIGH-SPEED TWIST DRILLS,
MILLING CUTTERS, REAMERS,
SLITTING SAWS.
THOS. FIRTH & SONS, LTD. SHEFFIELD.

GWYNNES
LIMITED.

CONTRACTORS TO H.M. GOVERNMENT

MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE

"CLERGET" PATENT AERO ENGINES

ENGINEERS, LONDON.

GWYNNE, LONDON." "HAMMERSMITH 1910"

GWYNNES, LTD.

The firm of Gwynnes, Ltd., of Hammersmith, owned a world-wide reputation as manufacturers of pumping plant—more particularly of the centrifugal type—long before aviation came into being.

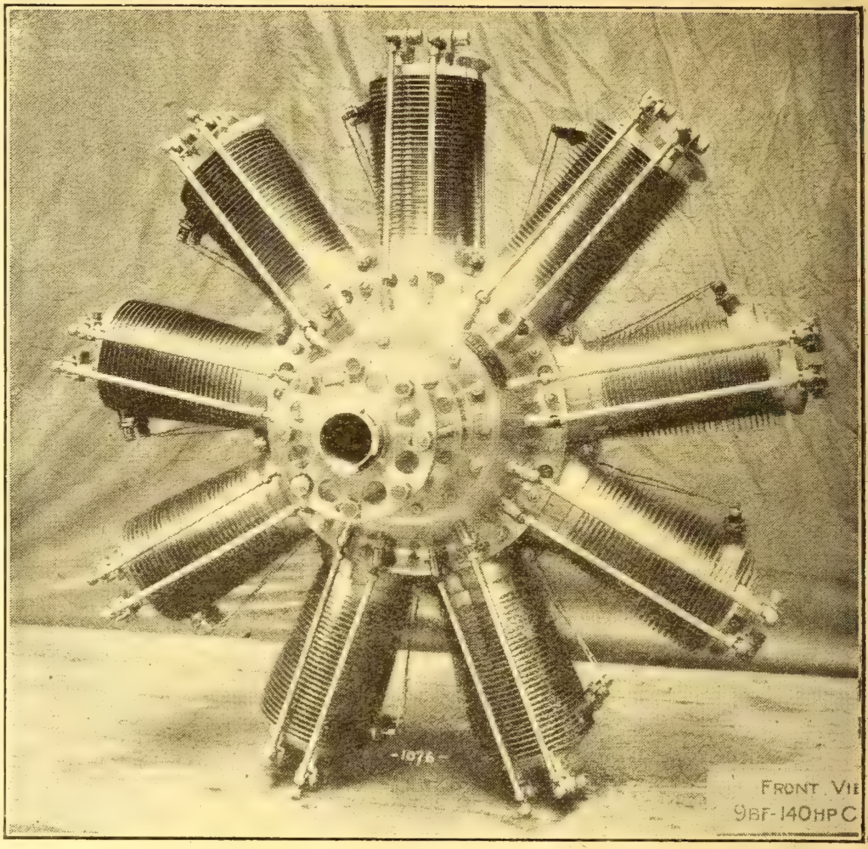
Quite early in the history of that art—before the war—Gwynnes took up the manufacture of rotary aero-engines of the Clerget type.

When war broke out they were one of the few firms who were in a position immediately to supply British-built aero engines, and, during the war, their production of these engines in the 80, 110, and 130 h.p. types became very large indeed. In addition, they produced in the latter stages of hostilities a quite considerable number of B.R.2 engines of 230 h.p. The output of Clerget engines during the war was roughly 2,750, and of B.R.2 engines, 900.

At the moment, Gwynnes, Ltd., are engaged upon the building of a small 9-cylinder 100-h.p. Clerget engine, with cylinders 105 mm. bore by 140 mm. stroke, which is designed to meet the demand for a light engine of low-running cost, giving on output sufficient for small fast single and two-seater machines.

This engine is built generally on the well-tried Clerget lines, and is in no sense an experimental attempt.

It may safely be assumed that Gwynnes, Ltd., are in a position to supply any of the other types of Clerget engines if a demand for them should arise.



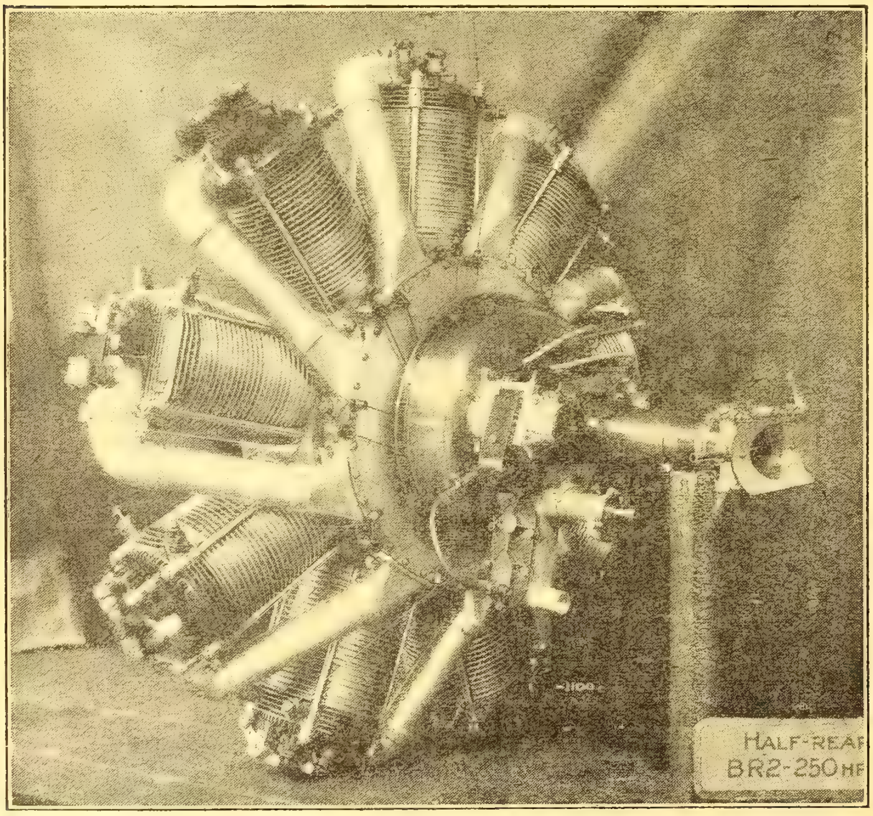
The Gwynne-built Clerget Type 9B.F. of 140 h.p.

The types of engines manufactured by the firm so far are :

Clerget type 7Z—80 h.p., 120 mm. bore, 150 mm. stroke.
Clerget type 9Z—110 h.p., 120 mm. bore, 160 mm. stroke.
Clerget type 9B—130 h.p., 120 mm. bore, 160 mm. stroke.
Clerget type 9B.F—140 h.p., 120 mm. bore, 160 mm. stroke.

The three latter engines vary mainly in the matter of compression ratio.

The new engine referred to above is known as the 9J.



Magneto End View of the Gwynne-built 9B.F. Clerget.

A sectional drawing of this engine, which is unfortunately too full of fine detail to reproduce here, reveals the fact that with one exception the well-tried features of the previous Clerget models have been retained.

The two mechanically operated valves in the cylinder head, the valve gearing and the arrangement of magnetos, carburetter and oil pump on the rear mounting plate are exactly as in the earlier types of Clerget.

The exception is in the construction of the cylinders, which are now built up with a steel liner, onto which is pressed a separate cooling skin from which project the usual radiating fins—this being apparently of aluminium.

The number of low-powered single-seater machines now being built for the sporting pilot owner will undoubtedly lead eventually to a demand for small sporting two-seaters at reasonable prices and of reasonable performance, but not of colossal speed, and equipped with economical engines.

This demand the new Clerget should effectively meet.

The high qualities of the Clerget engines produced by Gwynnes in the past, and the effective work performed by them in such famous machines as the Sopwith one-and-a-half strutters and the "Camels," and the excellent work put into the B.R.2s should be an ample guarantee that any engine supplied by the firm will be made of the best materials, in the best type of workmanship and finish.

BLOCTUBE CARBURETTORS
FOR AERO-ENGINES

RENÉ TAMPIER
CONSTRUCTING ENGINEER,
INVENTOR AND PATENTEE

CONTRACTOR TO H.M. AND ALLIED GOVERNMENTS.
PARIS. LYONS. TURIN.

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The "VICKERS-VIMY-ROLLS" which accomplished this wonderful flight had

M^c^GRUER HOLLOW SPARS

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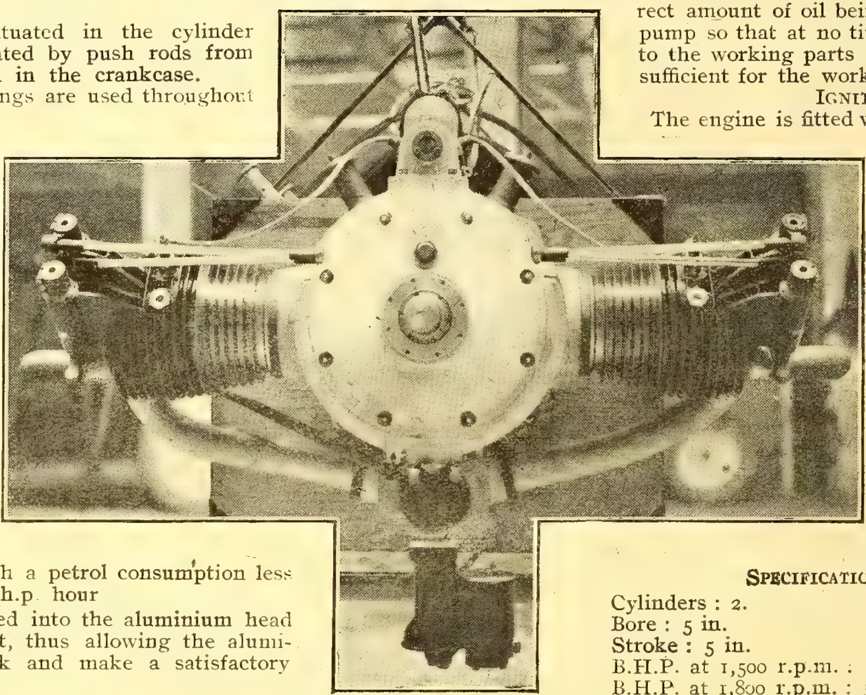
S·B·A·C
THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS

THE ARMSTRONG-SIDDELEY MOTORS, LTD.

The Armstrong-Siddeley 2-cylinder aero engine which has been designed for use in the smaller sizes of single-seater aeroplanes is air-cooled, and in general design it is an advance on any previous engine of its kind.

The engine has two horizontally opposed cylinders, 5 in. bore by 5 in. stroke, the offset between their axis being 1½ in. This is achieved by the use of roller bearing big ends to the connecting rods, and the result is that the out of balance couple, present in all engines of this type in which the cylinders are not exactly opposed, is reduced to a very small amount.



The valves are situated in the cylinder heads, and are operated by push rods from a camshaft contained in the crankcase.

Roller or ball bearings are used throughout the engine.

CYLINDER CONSTRUCTION.

The construction of the cylinders is that of an aluminium alloy head into which is screwed a steel liner, thus forming the complete cylinder. This design is the outcome of a long series of experiments, and as much as 30 h.p. per cylinder has been obtained and a m.e.p. of 127 lb. per square inch has been reached with a petrol consumption less than 0.6 pints per b.h.p. hour

The liner is screwed into the aluminium head under heat treatment, thus allowing the aluminium alloy to shrink and make a satisfactory joint.

The valve seatings are of bronze and are expanded into the cylinder head, after which they are machined in position.

VALVE GEAR.

Each cylinder is fitted with two valves which are manufactured from the very best quality steel which is procurable for this purpose. They are operated, as stated previously, by external push rods operating through horizontally placed rocker shafts.

CRANKCASE UNIT.

The cylinders are mounted by a special device onto an aluminium crankcase, which is constructed of one unit with a front cover through which the crankshaft protrudes to carry the propeller boss. The crankcase is neat in external appearance and is mounted onto the front of the aeroplane by four bolts which are accessible from the outside.

LUBRICATION.

The lubricating oil is contained in the base of the crankcase and is fed to the working parts of the engine by an oil pump. There is a special adjjustment to allow the correct amount of oil being supplied from the pump so that at no time is more oil going to the working parts of the engine than is sufficient for the working.

IGNITION.

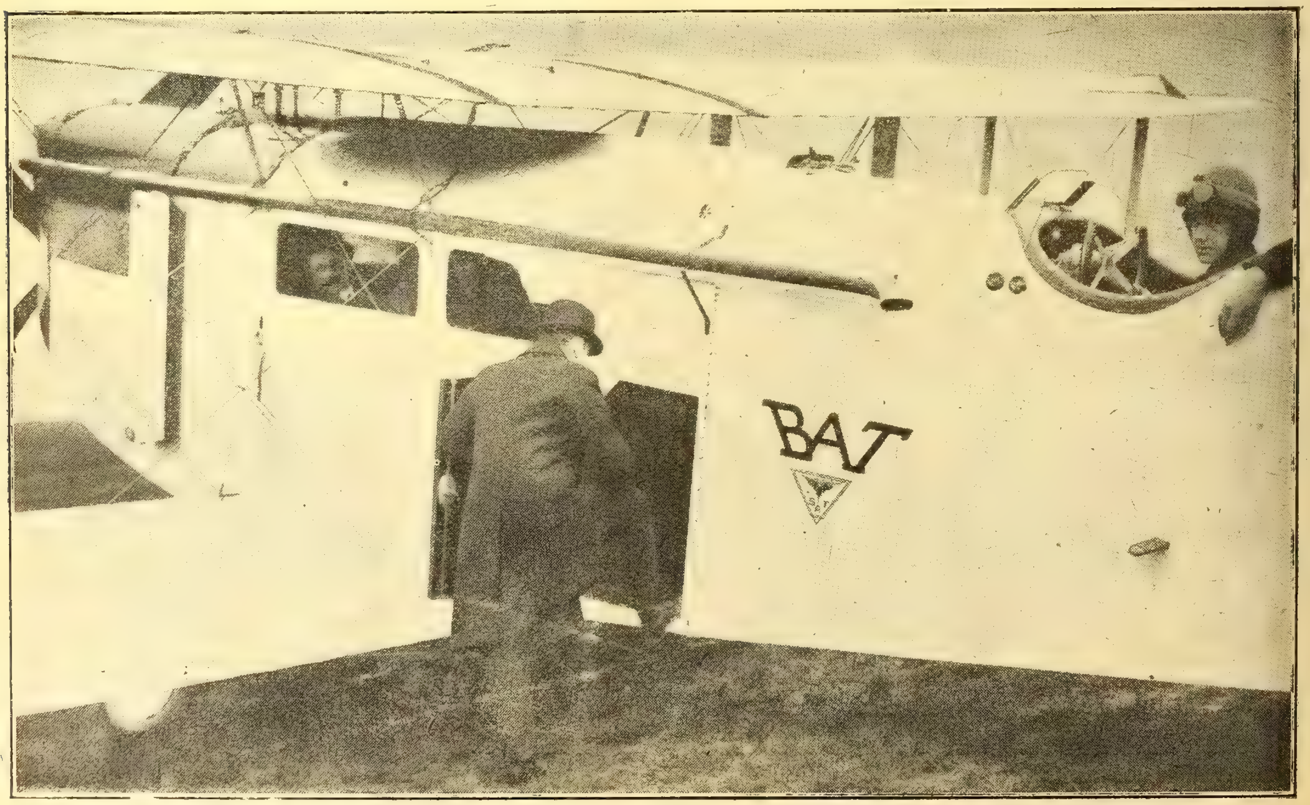
The engine is fitted with one ignition only, that is, a 2-cylinder magneto of British manufacture. It is not considered necessary or desirable to fit a dual ignition to an engine of this nature, as was necessary on larger engines used during the war.

CARBURATION.

The incoming gases pass through an exhaust heated jacket mounted on the underside of the crankcase.

SPECIFICATION.

Cylinders : 2.
Bore : 5 in.
Stroke : 5 in.
B.H.P. at 1,500 r.p.m. : 42.
B.H.P. at 1,800 r.p.m. : 50.
Petrol consumption :
3½ gallons per hour at 1,500 revs. per min.
Oil consumption :
2¾ pints per hour at 1,500 revs. per min.
Weight dry : 135 lb.
Overall breadth : 39.5 in.
Overall height : 31.15 in.
Overall depth : 20.5 in.
Engine fixing bolts P.C. diameter : 15 in.
Price (provisional) : £250 at works, Coventry.



The Cabin of the B.A.T. F.K.26. The first aeroplane designed "ad hoc" for commercial service.

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are designed to carry far greater loads than are possible with any other make.

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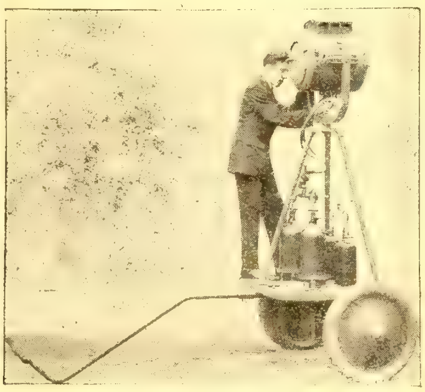


An "IMPERIAL" Landing Light

THE EMPLOYMENT OF METAL IN AIRCRAFT CONSTRUCTION.

It was, of course, inevitable that the development of metal in Aircraft Construction would in time lead to considerable alterations in the principles upon which aircraft are built. For instance, what may be called the "two-spar" wing with its internal bracing wires had become a set and universal type, and apparently, so long as wood remained the constructional material, it is reasonable to assume that wings constructed upon that principle would not have been departed from.

But the successful adaptation of metal to the requirements of aircraft construction has now rendered possible considerable departure from those formerly accepted lines, and one of the most noteworthy of these innovations is already to the fore in the shape of the "Mayrow-Wing."

This is an all-metal wing in the design of which the two spars as usually understood are abolished and internal wires absolutely done away with.

In the place of the usual twin spars the "Mayrow-Wing" has five longerons running parallel with the front edge of the wing and a number of transverse ribs placed obliquely from front to rear and connected with the longerons at each crossing point in such manner that the longerons and ribs together form a series of triangles. The wing can be surfaced either with fabric or metal. It is claimed that internal wires are neither necessary nor of any advantage, and therefore none are fitted.

This method of wing construction is a radical departure from the hitherto accepted principle upon which wings have been built, but providing that it can be successfully proved that the necessary strength and reliability is obtained, that point is hardly material.

It would certainly appear that a more advantageous distribution of stress is attained when it is taken up by a number of members all designed to bear a proportionate share of the load, but it does not necessarily follow that this new principle of construction would under actual flying conditions provide all the requirements successfully obtained under the "two-spar" principle of construction.

Still, the inventor and patentee of this innovation in wing building, Mr. James Mayrow, has had very considerable experience in metal construction. There are few men who have spent so long in pursuing the problem of metal construction of aircraft, and it is reasonable to suppose that a practical, as well as a technical, man, as he has proved himself to be, would launch upon the aircraft world anything that is not sound.

The Aircraft Steel Construction Company, which is the concern commercially exploiting this development of the "Mayrow-Wing," state that having lately acquired large new works at Stratford, they are now in a position to execute orders for this form of "All-Steel" wing for any type or design of plane at present flown, and are prepared to guarantee results. This latest form of metal wing is guaranteed to show a 50 per cent. greater margin of safety, weight for weight, than any twin-spar wing, whether the spars be of metal or wood.

The technical details of this wing should prove very interesting to all engaged in aircraft construction, and no doubt they will now soon be available for the investigation and consideration of all concerned.

An important result of the employment of metal as a constructional material for aircraft is the possibility of introducing complete standardisation and interchangeability of all members and parts.

The system under which the Aircraft Steel Construction Company build is designed to provide this. The problem in the case of aircraft presents many difficulties not met with in other structures. Nevertheless, the important point is that standardisation and interchangeability is really aimed at, for in no other type of machine is it of more importance and advantage than in commercial aeroplanes.

Under the most favourable flying conditions and with the best of skill and judgment small accidents, and therefore minor injuries, are almost inevitable in aviation. Consequently, the ability to replace a damaged member or part from stock is an advantage of almost incalculable value.

One point in connection with the work of the Aircraft Steel Construction Company is that they employ only specially treated steel, which they claim to be absolutely rustless. The process is a secret one, but they are prepared to submit steel treated by this process to the severest tests in the matter of rusting and oxidisation. Their own test is to place a steel member after passing through the process upon the sea shore between low and high water mark. In this manner the tide alternately submerges the metal in salt water and exposes it to the air, sun, rain and wind. If steel is to be employed in aircraft construction this question of rustlessness is of vital importance, and a steel that will sucessfully withstand a test of this severity could obviously suffer no deterioration whatever in a machine that is as carefully safeguarded and looked after as an aeroplane.

B.T.H. MAGNETOS.

When war produced a demand for magnetos, for which there was no established source of supply in the British Empire, it might have been expected that so wide awake an electrical manufacturing concern as the British Thomson-Houston Co., of Rugby, should have set itself to the problem of remedying this defect, and that B.T.H. magnetos should have established so great a reputation, even in the face of the fact that their products were markedly different to the almost universal "Bosch" of earlier times.

The B.T.H. magnetos of the A.V. type have been specially developed for aero engines and are made for either eight- or twelve-cylinder engines.

They are all of what is termed the inductor type of magneto—that is to say, that, instead of the usual type of armature winding attached to the rotating member of the magneto, and thus subject to vibration, centrifugal stresses, and the need for extreme compactness, the armature windings are wound on a fixed laminated core, and the rotating parts of the mechanism are confined to solid soft iron pole pieces whose rotation serves to direct the magnetic flux of the magnets proper through the armature core in alternating directions, to the contact breaker and to the distributor.

The advantages of the type are numerous. A much stronger construction is possible, armature slip rings and their attendant risks of leakages are avoided, and the use of a four-pole rotating inductor allows of four sparks per revolution being obtained instead of two, as with the usual form of magneto armature, and the magneto thus may operate at half the speed of rotation needed in the rotary armature type. The stationary armature coil arrangement makes it possible to use much simpler winding methods and allows of more space for insulation.

The high tension distributor is of the spark gap type, i.e., the rotating contact does not touch the distributor segments, but is separated by a short gap, and hence there are no high tension carbon brushes to wear out, stick, fill the interior of the distributor with carbon dust, or wear grooves in the distributor casing.

THE DEVELOPMENT OF TORPEDO AIRCRAFT.

Amongst those who have done good work in the development of torpedo-carrying aircraft in this country the Blackburn Aeroplane and Motor Co., Ltd., deserve some considerable mention.

Their first connection with the torpedo connection arose over the design of the G.P. (general purpose) seaplane in 1915-16. Although not purely a torpedo machine this twin-engined machine was arranged to carry a light torpedo as one of the numerous forms of armament to which it was susceptible, and with it the firm gained some experience of the fitting, carrying and dropping gear necessary to this class of work.

When the Sopwith "Cuckoo" was produced, and had been tested and found satisfactory as far as the aeroplane part was concerned, it was decided that the work of putting it onto a production basis should be put into the hands of a firm conversant with the essential torpedo problems, and the work was therefore entrusted to the Blackburn firm, who with the assistance of experts from the R.N.A.S. carried out much work in connection with the torpedo-dropping and aiming gear, the silencing of the engine exhaust, and the fitting of warming gear to prevent freezing-up of the air passages in the torpedo itself—a phenomenon which occurred frequently at high altitudes and which effectively demoralised the torpedo by preventing the torpedo engine functioning.

The problems of the "Cuckoo" being satisfactorily solved and the final pattern in production, Blackburns were asked to design a machine to carry a still heavier torpedo and at a higher speed and with a greater climb than the "Cuckoo."

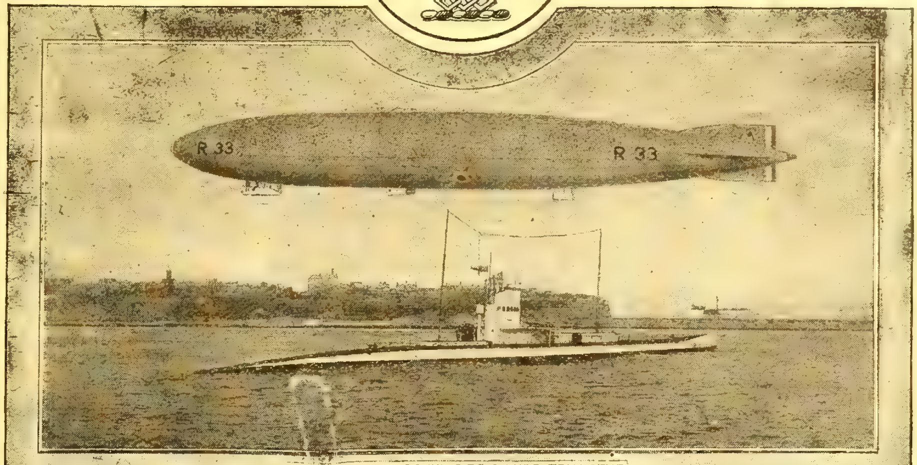
These two requirements were met in the "Blackburd," though necessarily at the cost of some sacrifice of the manoeuvrability which distinguished the "Cuckoo."

This machine represented a very difficult problem. A very large load had to be carried, and as it was to fly from the deck of a seaplane-carrier special measures had to be adopted to secure a quick get off. This was met by the use of trailing edge wing flaps giving the effect of a high lift wing when pulled down. The machine had to be fitted with emergency flotation gear of the "Port Victoria" type, which involved arrangements for releasing the wheels before alighting, and also before dropping the torpedo.

The control problem, with wing flaps, wheel release, torpedo release, air bag inflation gears, and so on, was a very complicated one, and required much ingenuity, but a practically fool-proof interlocked control gear which made it impossible for operations to be carried out incorrectly was devised, which greatly simplified the controls.

At the time of the Armistice a further torpedo-carrier, the "Kingfisher," was in course of design which incorporated many new features. The advent of peace has delayed progress on the "Kingfisher," but the firm have not abandoned the work, as they are confident that this type of machine has a very great future for war purposes.

TRADE MARK



THE FAMOUS AIRSHIP R 33 ON HER TRIAL TRIP.

— RIGID AIRSHIPS FOR WAR, MAIL & PASSENGER SERVICE. —

SIR W. G. ARMSTRONG, WHITWORTH & CO., Ltd.,

NEWCASTLE-UPON-TYNE. **Works: Barlow, near Selby, Yorks**

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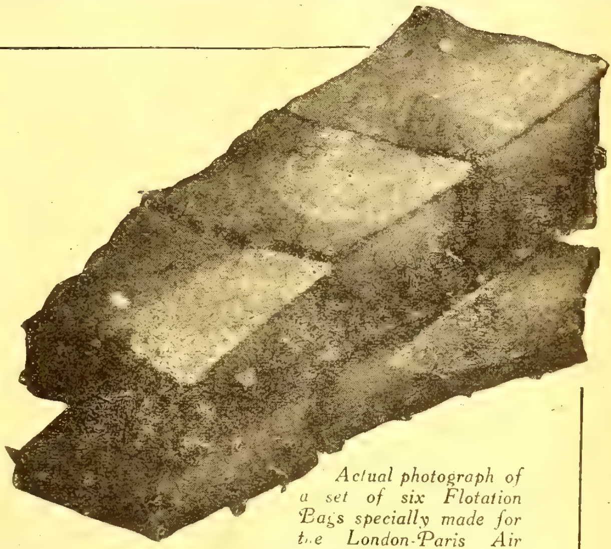
Aeroplane Flotation Bags

The latest and most successful device for sustaining an Aeroplane when a forced descent has to be made upon the water. These bags, which are guaranteed absolutely air and water tight, are specially shaped to fit compactly into the framework of the fusilage. They are indispensable where flying is undertaken continuously over the sea, or other large stretches of water.



Actual photograph of a set of six Flotation Bags specially made for the London-Paris Air Service.

AIRSHIPS LTD.

LONDON OFFICES: 25-27, OLD QUEEN STREET, S.W.1.
WORKS: HIGH STREET, MERTON, AND HENDON.

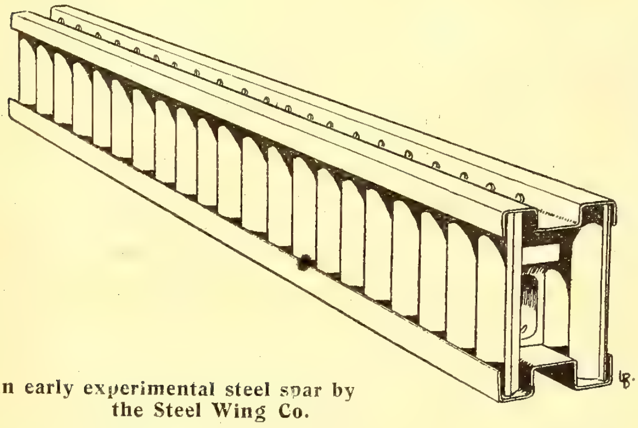
THE STEEL WING CO., LTD.

With the advent of peace and the possibilities of using aircratf for exploratory and development work in the less frequented parts of the earth, the importance of climate-proof aeroplanes assumes a new interest.

It might seem reasonable to assume that a form of construction capable of withstanding the rigours of the British climate would survive that of any other part of the habitable globe, and with the exception of a few particularly difficult—in the climatic sense—localities, this is largely true—so far as purely meteorological variations are concerned.

On the other hand, those countries whose human population is sparse usually abound in other forms of life—forms usually classed as lower but often possessed of a destructive capacity far in excess of that of the average human.

White ants, for instance, could reduce a timber-built aeroplane to produce with a speed and efficiency which would make any Government Salvage Department look silly, and, therefore, for climates where such destructive pests are indigenous, some more resistant structural material has its advantages.



An early experimental steel spar by the Steel Wing Co.

Apart, however, from such special local conditions, metal construction for aircraft has numerous and obvious advantages—provided that no handicap of weight or of deficient strength is thereby involved.

The difficulties of using metal as a substitute for timber in aeroplane structure are entirely manufacturing difficulties, and they have been very great.

Nevertheless, they have been successfully overcome by several English constructors, and amongst them by the Steel Wing Co., Ltd., who have been engaged in experimental work exclusively directed to this end for several years.

The essence of their solution of all the difficulties is the use of members constructed from thin steel strip, into which longitudinal corrugations are rolled or pressed, these corrugations having the effect of giving to the material that resistance to local stresses which is deficient in the original flat strip.

The result of their work is that the firm is now in a position to manufacture all-steel wings for any normal type of aeroplane, which shall weigh no more, and shall have a materially greater strength than wings of the usual timber type.

SAMUEL OSBORN AND CO., LTD.

Samuel Osborn and Co., Ltd., of the Clyde Steelworks, Sheffield, have been manufacturing alloy steels since the year 1871, when they acquired the sole right to manufacture "Mushet" self-hardening steel. Since then they have been making alloy steels under very special conditions and have developed this manufacture extensively.

They are now in a position to supply steels of the highest excellence for the special requirements of aircraft manufacturers. These special quality steels are manufactured under the supervision of a trained metallurgical staff, and give not only the usual static tests (tensile strength, etc.) required to meet the demands of aircraft construction, but also the more important resistance to shock, and endurance of "fatigue."

Their electric alloy steel gives the highest possible impact value and should be used for all parts where high impact resistance is necessary.

They will at any time be pleased to give purchasers and users any information concerning the heat treatment of their steels, their assistance in the choice of the most suitable steels, and the benefit of their experience in the endeavour to remove any difficulties encountered.

All steels bear the well-known "Hand and Heart" trade mark, and Messrs. Osborn recommend their C.H. brand (case-hardening) steel, their S.C.H. brand (special case-hardening) steel, and their E.S.C. brand (extra special case-hardening) steel, for gears and stamped parts. Where parts require a glass-hard surface with a strong core, capable of withstanding vibratory shocks, the S.N.C.H. brand (special nickel case-hardening) steel, and the H.N.C.H. (high nickel case-hardening) steel is recommended

Their rustless steel is suitable for valves and all purposes where it is desirable to avoid rust. N.C.C. and N.C.7 brand (nickel chrome case-hardening) steels are recommended for parts which have to withstand the severest shocks.

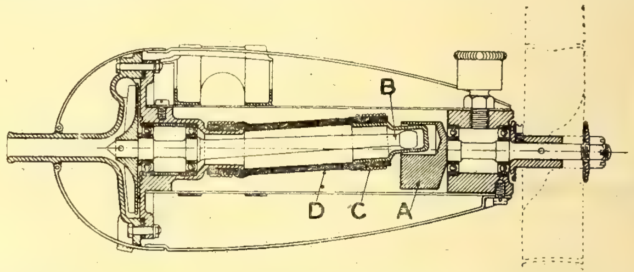
An ideal steel for R.A.F. "Specification 5.B" is their N.C.A.H. brand (nickel chrome air-hardening) gear steel; and M.T.R. (nickel chrome oil-hardening) steel will be found to give excellent results in tensile strength, elastic limit, extension and contraction, and is absolutely one of the finest alloy steels produced.

Aircraft manufacturers will also find that Osborn's "Mushet" high speed steel milling cutters and twist drills, and Mushet's special steel for turning tools, will give the utmost satisfaction.

THE AUSTIN "GLANDLESS" PETROL PUMP.

This type of centrifugal petrol pump has been thoroughly tested, and is now officially approved for use in aeroplanes supplied to the Air Ministry.

The "Glandless" pump, as will be seen from the illustration, consists of a propellor-driven crank "A" running in ball-bearings, which operates a short stroke crankpin "B," machined as a part of the impeller spindle of the pump itself. Interposed between the crank disc and the crankpin is a special metal thimble "C," which is connected directly to the neck of the pump body by means of a piece of standard petrol-resisting rubber hose "D."



The thimble "C" therefore only oscillates round a circular path, the crank disc revolving outside it and the crankpin inside it.

By this arrangement, provided all joints and connections are tight, there is no danger of petrol leakage, and the loss due to friction is reduced to a minimum. In ordinary use the petrol-resisting rubber hose lasts a considerable time, and, moreover, can be easily renewed by a standard piece of petrol-resisting rubber hose joint.

The "Glandless" pump is manufactured by the Austin Motors Ltd.

"CELLON DOPE."

During the last few months, as could only be expected, there has been very little doing in the aeronautical industry, but the policy of resting on the laurels gained through sheer hard work does not commend itself to Cellon, Ltd. Although very little is heard anent the work being done, it is comforting to know that experimentation is being carried out.

Cellon, Ltd., have been conducting quite a lot of experimental and research work on improvements in dope, with the result that in addition to their ordinary schemes for doping they are now in a position to supply a scheme in which the pigmented covering is entirely abolished, and the whole doping comprises only four coats. This scheme has been used by one or two firms on experimental machines, and they have expressed great satisfaction with it. It is prepared in all colours, thus giving firms a variety of shades in which they can finish their machines.

During the last few months consignments of "Cellon" have left this country for Holland, Spain, Norway, Argentine, Chili, Japan, Australia, and India.

As regards their post-war work it is interesting to see that Cellop Dope has so far been used on the Sopwith, Martinsyde and Boulton and Paul machines destined for the trans-Atlantic flight; on the Sopwith, Supermarine and Fairey machines, representing the British team in the "Schneider Cup" contest, and on the Sopwith, Martinsyde and Blackburn machines at present entered for the Australian flight.

It may be interesting to recall that in 1912 every important competition in this country was won on machines doped with "Cellon."

Telephones :
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London : Gerrard 5716.

Telegrams :
"Flight, Gosport."
"Embellishment, London."
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GOSPORT AIRCRAFT Co.

DESIGNERS AND BUILDERS OF

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FOR

THE AIR MINISTRY AND FOR COMMERCIAL AND PLEASURE USE.

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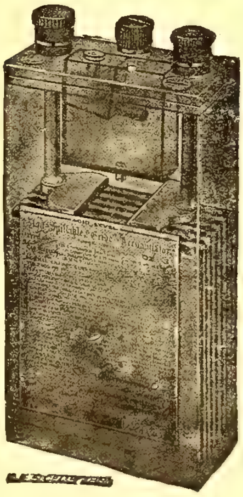
"Exide"
EXCELLENCE.

In accumulator manufacture, more than in most things, quality of materials and the correct treatment of these materials is of supreme importance.

Years of research, the careful designing of each type for the work it is intended to do, critical selection of all materials and careful workmanship with modern appliances, all form the basis of our manufacture of

Accumulators of Quality.

220, SHAFTESBURY AVENUE, W.C.2,
is the address at which you may examine these accumulators.



THE Chloride ELECTRICAL STORAGE COMPANY LIMITED.

Head Office and Works
CLIFTON JUNCTION
MANCHESTER.
London Office
39 VICTORIA STREET S.W.1.

EDGAR ALLEN AND CO., LTD.

The steel maker's art (as practised by Edgar Allen and Co., Ltd.) is a true revolution. The ever-growing demand for new perfections and new varieties made by engineering problems has brought forth a succession of types. The pioneers of motor-car construction, in particular, called into being a whole series of alloy steels, conforming to new standards of resistance.

Similarly, in aircraft, the demand for steels of greater strength and tenacity necessitates a large amount of experimental and research work. Specialisation in steel, as worked out on scientific lines in the Allen Research Laboratories, has produced the liberal variety of Allen Steels, each with its special uses.

The dire necessities of war called for enormous quantities of special alloy steels for aircraft use which had not only to be up to standard in mechanical tests but also thoroughly reliable in use. The steel maker was supplied with what, at the time, were impossible specifications, and it was only by the scientific work carried on in the laboratories that not only was material made to conform to these specifications, but the manufacturers were enabled to produce even better results than asked for. Again, scientific steel-making for war-work and other purposes must leave nothing to chance.

At the Imperial Steel Works, Sheffield, Edgar Allen and Co., Ltd., exercise the strictest care throughout the manufacturing process. In some of the most useful alloy steels, surface flaws and blemishes are likely to form in the early stages of their manufacture. If they were not eradicated at the works, it is easy to see that finished steels might prove unreliable, and cause waste and trouble which no amount of laboratory work could prevent. Edgar Allen and Co., Ltd., treat their steels right through the manufacture in every possible way so as to eliminate all flaws, etc.

Each grade of steel is capable of playing many parts, much depending on treatments. The steel is first quenched at a fairly high temperature, and afterwards reheated to a specified low temperature, and then allowed to cool. On the thermal degree to which this reheating is carried depends the final characteristics of the steel.

A high reheating gives low tensile strength but greater toughness, and a low reheating greater strength, with some loss of toughness Alloy steels are highly susceptible to such treatments, and by suitable variations can be made to acquire a remarkable variety of characters. This places at the disposal of the user a corresponding rich selection of steels made from one original material.

Edgar Allen and Co., Ltd., have produced amongst a number of extremely useful handbooks one that deals with the varieties of alloy steels suitable for aero- and motor-car engines. The correct Allen steel for every motor-car and aeroplane part is specified with the official and other accepted standards to which it conforms.

In addition to this handbook, which, with its charts and tables, is, in itself, of extreme practical use. the Edgar Allen Research service has been established, which is for the assistance of all steel users. They are willing to investigate the cause of difficulties connected with specimens submitted to them, and, if necessary, an expert demonstrator will be sent to assist in obtaining correct results. This service is placed freely at the disposal of engineers and constructors, and no fee is charged for research and advice.

A NEW AERIAL ROUTE MARKING DEVICE.

A new method of route indicating, which may become of immense importance to commercial aviation is at present being developed and tested in France.

It depends on the well-known fact that a conductor carrying an alternating electric current will induce in another conductor parallel to it a current alternating at the same frequency. The intensity of the current so induced becomes rapidly less as the distance between the two is increased, but with modern detecting appliances it is possible to transmit signals over several miles.

Taking advantage of this fact, it is proposed to delineate aerial routes by laying along each wires conveying alternating currents of definite frequencies which will be particular to each route, and to equip aircraft with a telephonic receiving set, which can be made to be directive by very simple means. An aircraft has then merely to pick up on its receiver the note proper to its desired route, and keep the sending wire of that note beneath it.

Aerodromes will be looped round by such a cable, so that in a fog a pilot would find himself flying round in a loop if he followed the note accurately, and will thus receive a signal which should enable him to land therein.

It is said that tests made with a cable laid in the tortuous entry to a difficult harbour have shown that it is possible to navigate a ship accurately by this means, and the value of such an arrangement for cross-country flying in bad weather should prove immense.—J. S.

TITANINE, LTD.

Among the recent developments of Titanine, Ltd., is the production of a material which is known as "Titanine Adhesive and Varnish," and which, it is hoped, will overcome part of the difficulties that have arisen from leakages to fabric-ed seaplane floats. The adhesive does not soften from heat, and is waterproof.

Certain people in finishing oft seaplane floats have been known to apply the ordinary paint direct on to the canvas, which invariably results in rotting it, owing to most paints containing oil.

The "Titanine Adhesive and Varnish" is used as an adhesive to apply the canvas to the float, and also as a varnish after the fabric has been applied, thereby isolating the paint that is afterwards put on as an outside protective covering, and prevents any likelihood of leakage or of rapid deterioration.

In addition to the above product, Titanine, Ltd., also produce the following manufactures, all of which are well-tried and up to the standard claimed and required :—

"Titanine" Aeroplane Dope, "Planoline" fireproofing solution for use on fabric prior to doping, transparent and pigmented oil varnishes, Nitro pigmented finishing varnishes in all colours (suitable for commercial aviation), seaplane float paint, etc., etc.

BRUNTONS, LTD.

Bruntons, Ltd., of Musselburgh, the well-known manufacturers of all classes of high-grade steel-wire, wire rope, springs, and a host of other articles, as well as cold-drawn steel for all purposes, claim to be the first firm in Great Britain to produce tie-rods for use in aircraft.

As long ago as 1907 they supplied steel tie-rods to the British Government for use in construction of airships and aeroplanes, and have supplied wire and wire ropes for use with aircraft from very early times.

With the adoption of streamline tie-rods, more commonly called Rafwire, as standard bracing for practically every type of British aeroplane, Bruntons, Ltd., have enlarged their plant, until, at present, they are capable of producing larger tie-rods than any yet used in aircraft construction.

They now have a special factory equipped for the manufacture of tie-rods of various sections, together with all kinds of fitments, such as end fittings, fork ends of divers patterns, locking plates, turnbuckles, etc., and also steel wire, piano wire, and steel wire cables, of every necessary weight and strength.

Realising the necessity to combat rust and other corrosive evils in aircraft wiring, Bruntons, Ltd., have introduced a new method of depositing a thin zinc coating to wires and rods known as "Bruntonising." It is superior to the ordinary hot galvanising process in two main respects : first, the coating is quite smooth and bright, which not only gives it a better appearance but makes it adhere more firmly to the wire; secondly, the process has no deleterious effect on the physical properties of the wire, as hot galvanising has.

This process has been approved by the British Government as the most efficient protection from atmospheric corrosion that has yet been devised. They also have special plant for electro aglvanising, Cosletising and enamel spraying all wires and fittings.

BRITISH MAGNETOS.

Prior to the war it was the general idea that Germans were the only people who were capable of making reliable magnetos, and the name of Bosch was to be found on nearly every spark-producer in use on British cars and aero engines.

It was not until the war started that we had to settle down to the problem of making our own magnetos, and as the internal combustion engine was to play such an important part in all spheres of the fighting it is to the credit of the few firms who took upon themselves the task of creating and building up the British magneto industry that we succeeded in beating Germany in the air, on land and sea and under the sea.

An interesting handbook has been issued by the British Ignition Apparatus Association, of 8, Bream's Buildings, London, E.C.4, which has been produced in the interests of the British L.M. Ericcson Mfg. Co., Ltd., of Beeston, Notts, the British Thompson-Houston Co., Ltd., of Coventry, the E.I.C. Magnetos, Ltd , of Birmingham, the M.L. Magneto Syndicate, Ltd., of Coventry, North and Sons, Ltd., of Watford, the Thompson-Bennett Magnetos, Ltd., of Birmingham, and C. A. Vandervell and Co., Ltd., of Acton, W.3.

This booklet gives particulars of standardised British magnetos made to dimensions which permit of interchange and quick replacement of parts produced by the British firms mentioned above, who have helped to achieve success for Great Britain, and, at the same time, gained experience which guarantees satisfaction for the user.

A copy of this handbook will be sent to anyone who applies to the Publicity Department, British Magnetos, 8, Bream's Buildings, London, E.C.4.

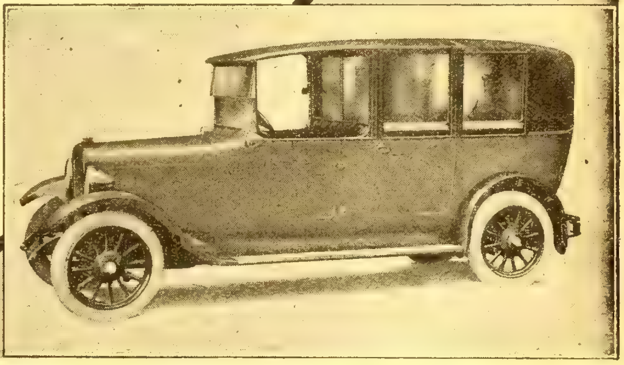
What flying has taught us—

The demand of the aeroplane for the utmost power from the lightest and most trustworthy engine, and our concentration on that problem, has taught us much—and each owner of the new Austin "Twenty" will benefit thereby.

More power with less weight and greater reliability combined with silent running, flexibility and marked economy are characteristics of the new Austin "Twenty" and assure its selection by discriminating motorists.

The new Austin "Twenty"

THE AUSTIN MOTOR CO., LTD.,
Head Office: NORTHFIELD, BIRMINGHAM
Telephone—Kings Norton 230.
Telegrams—"Speedily, Northfield."
And at London, Manchester and Paris.



18 NEW RECORDS

On Nov. 22nd, Capt. Gathergood, piloting a 450 h.p Napier Engined Airco 9R machine, secured the following 18 Official British Records:—

Longest distances in ¼ hour, ½ hour, 1 hour and 2 hours.

Greatest speed over straight flight of 5 Kilometres.

Greatest speed in closed circuit for

5, 10, 20, 30, 40, 50, 100, 150, 200, 250, 350, and 400 Kilometres—without alighting.

in 1 day, on 1 machine, with THE

ONE LUBRICANT

WAKEFIELD

Castrol

RECD. 'R'

C. C. WAKEFIELD & CO., LTD.,
Wakefield House, Cheapside, London E.C.2.
and 21, Rue du Mont Thabor, Paris.

TRIPLEX SAFETY GLASS AT THE PARIS AERO SHOW.

As might be expected, "Triplex" Safety Glass will be represented in all its forms at the Paris Salon d'Aeronautique, both by the British Triplex Safety Glass Co., Ltd., and by the Société due Verre Triplex, of 17, Rue Desnouettes, Paris. In addition to an exhibit at Stand 4, Gallery C, where there will be a large selection of aeroplane wind-screens and windows, goggles, map cases, etc., practically all the flying machines exhibited will be fitted with Triplex Safety Glass wind-screens and windows.

There was, perhaps, no article used in aircraft during the war that was so consistently successful, and the fact that it is now being almost universally employed on all aircraft, motor-cars, etc., for wind-screens, windows, goggles, etc., is sufficient to prove that the qualities claimed for it are fully justified.

By a revolutionary method of making glass permanently and definitely unsplinterable, even under the heaviest blow or concussion, absolute safety and practically everlasting durability is ensured, many insurance firms even going so far as to make a considerable rebate on premiums charged on vehicles where Triplex glass is used, which is in itself one of its highest recommendations.

SWIFT, LEVICK AND CO.

Swift, Levick and Co., Ltd., who were known previous to the war as one of the largest manufacturers of special high-speed, nickel, cast, and electrically smelted alloy steels, have, since the commencement of the war, been one of the largest makers of all classes of electrically smelted alloy steel used in the manufacture of aeroplanes, aero engines and accessories. Among their specialities may be mentioned compass needles, permanent steel magnets for magnetos, and special armour-piercing bullet steel for use in aerial machine guns.

They claim to have been the largest British makers of all classes of compass needles, and turned out huge numbers of these for use in British and Allied aeroplane compasses. They also claim that they were the original British manufacturers of permanent steel magnets, and a very large percentage of the British aeroplanes, airships, etc., were run on magnetos using their steel magnets.

This particular part of their business has not fallen off since the war, and at present they are busy meeting the enormous demands put upon them by the motor-car industry. This remark also applies to all their grades of alloy steels, and they are turning out very large quantities for the construction of gear-boxes, driving-shafts, axles, etc., for the leading manufacturers of British motor-cars.

The experience gained by them during the war in manufacturing various grades of steel for employment in aircraft work has been of great assistance not only to them but the British industry at large, and accounts for the huge demands of the motor industry for their products. An interesting production, which naturally died with the cessation of hostilities, was the manufacture of a special armour-piercing bullet steel which was used largely by the Air Services during the latter part of the war.

HERBERT TERRY AND SONS.

It would certainly be interesting to know the limits to which a firm would put itself in the case of national emergency, in order to turn out articles of immediate use. This has been fairly well demonstrated in the late war, when firms accustomed to turn out articles of domestic necessity did not hesitate to build, according to the type of machinery available in their factories, anything from a tank to a split-pin. Herbert Terry and Sons, Ltd., of Redditch, who, before the war, were famous for the manuacfture of springs of all kinds, turned their attention to and turned out huge quantities of small parts such as springs, all kinds of press work, wire work, flexible shafting, cable controls, hose clips, etc., etc., and, incidentally, gained a reputation for producing everything of the highest grade, this reputation having as its outstanding feature the fact that the Sunbeam-Coatalen "Maori" engines fitted in the "R.34" in its memorable flight across the Atlantic and back had "Terry" valve springs throughout.

PETROL PRICES.

The present current prices of the products of the Anglo-American Oil Co., Ltd., are as follow:—Pratt's "Perfection" Spirit, 3s. 0½d. per gallon; Pratt's Aviation Spirit, 3s. 4½d.; "Taxibus" Spirit for heavy commercial vehicles, 2s. 10½d.

CASTROL AND RECORDS.

In connection with the 18 records made on Nov. 15th by Capt. Gathergood on an Airco D.H.9R. (450 h.p. Napier aero engine) it is interesting to note that Wakefield's "Castrol" was used as the lubricant and was responsible for the sweet and uninterrupted functioning of the engine, a task for which it is eminently suited, as has been proved in the past.

HALL AND PICKLES, LTD.

Hall and Pickles, Ltd., have just issued a descriptive booklet in which the different qualities of Tool Steels that they manufacture are enumerated together with the uses for which each is particularly suited. In addition, a few simple instructions for heat treatment and other particulars which may be of service to users of crucible steel are given.

Their high-speed qualities are sold under the registered corporate mark of "Hydra" and are steels of the finest quality, the result of the latest metallurgical research and practical experience, designed to meet the highest demands in machine-shop practice.

High-speed steel is a product indispensable amongst all users of tool steel. Since the time of its inception in the year 1900, when practical demonstrations were given at the Paris Exhibition, the development of this wonderful commodity has resulted in a remarkable revolution in machine-shop practice throughout the world.

In spite of the great care taken in the selection of materials of highest quality together with the employment of highly-skilled labour and extensive laboratory work, it is impossible to produce high grade high-speed steel which is entirely proof against injury when in the hands of the customer. The successful treatment of high-speed steel requires experience, care, and a high degree of skill, careful pre-heating and an intelligent forging so that a good heat is maintained during the operation.

The ultimate success of any high-speed steel tool depends entirely upon the amount of heat received in hardening and the way in which the heat has been applied.

In a similar way Carbon Cast Steel depends on the grade of iron used together with the applied skill of the steel melter and greater care is necessary in dealing with carbon steel, because most carbon steels have but a limited range of treatment, being much more sensitive and easily ruined in forging and hardening.

It is to this end that Hall and Pickles, Ltd., issue this handbook together with comprehensive instructions which are supplied with each brand of their steel, which, if carefully followed, cannot do other than produce the best possible results. In addition, to further assist their clients they have on their staff a highly-skilled high-speed steel expert, who is, at all times, willing to collaborate with anyone who is in difficulties regarding hardening and tempering their steels.

ANOTHER BROWN PRODUCT.

Brown Bros., Ltd., always to the fore where the comfort and convenience of aviators and motorists is concerned, have just put upon the market a very handy little file which is known officially as the "Spark" ignition file. It is sufficiently thin to get between the points of a sparking plug without separating them so far as to produce any danger of breaking the points in getting them back to the correct gap. In fact, the file itself is so thin that it can practically be used as a gap gauge for sparking plugs.

It is made specially for the job, and so, instead of having the usual sharp pointed tang, the steel rod from which the file is swaged is left in its original round shape and thus forms a convenient handle. The price of the file is 1s., which, in these days, is really remarkably cheap.

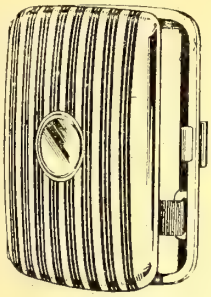
CORRECT LUBRICATION.

"Correct Lubrication," a 60-page booklet issued by the Vacuum Oil Co., Ltd., is considerably more than a mere statement of the excellence of Gargoyle Mobiloils. It is a real help to motorists, explaining in clear language the imperativeness of scientific lubrication and emphasising the reward of this practice—economy of repairs, of depreciation, and of fuel and oil. Engine and chassis troubles are delineated and their remedies stated, and a lengthy chart, embracing most types of motors, passenger and commercial, British and imported, shows the exact grade of "Mobiloil" to be used on each. Any one who reads this booklet—an act that involves no mental discomfiture—will gain an extension of knowledge that cannot fail to prove profitable.

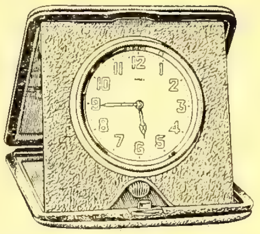
AN EXPERIMENTAL VACANCY.

There is a vacancy in one of the few aircraft works now seriously engaged on experimental work for a technical assistant. Applicants for the post must have a thorough knowledge of the mathematics necessary for aerodynamic and stress calculations, and should preferably have held a similar position before. Draughtsmen, tracers and so forth are not required, but a thoroughly experienced person of the kind usually described in aircraft factories as an "x-chaser" or "stress-merchant."

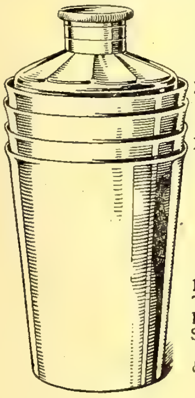
Applications should be addressed in writing to "X," c/o The Aeroplane, 175, Piccadilly, W.1.



9 ct. Gold Engine Turned Cigarette Case. **£11 5s.**



8-day Lever Watch, with Luminous dial, in Fold-up Leather Case. **£6 15s.**



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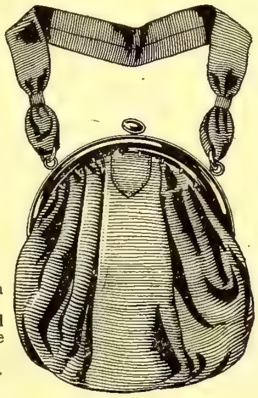

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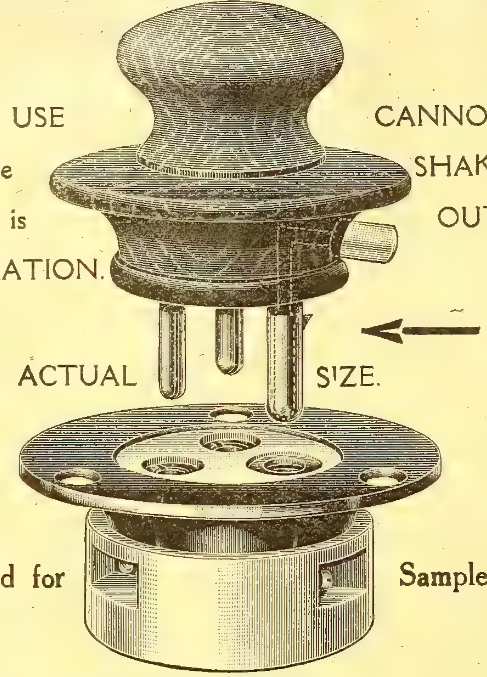

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NAVAL & MILITARY AERONAUTICS

[The official "Gazettes" and Personal Notices will be found on page 2124.]

GREAT BRITAIN.

FROM THE "COURT CIRCULAR."

Buckingham Palace, Dec. 16th.

The Right Hon. Winston Spencer-Churchill, M.P. (Secretary of State for War and Air), had an audience of the King this morning.

Buckingham Palace, Dec. 17th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted:—

The Most Honourable Order of the Bath (Military Division).—Companion.—Air Vice-Marshal John Higgins (also received the Air Force Cross).

The Most Excellent Order of the British Empire.—Officer —Military Division.—Sqdn. Ldr. Frederick Unwin, R.A.F.

Member.—Sec. Lt. John Knight, R.A.F.

The King then conferred decorations as follows:—

The Distinguished Service Cross.—Lt.-Col. Osborne Butcher, R.A.F.

The Military Cross.—Capt. Evan Pybus, R.A.F.; Flying Officer Richard Bentley, R.A.F.

Buckingham Palace, Dec. 18th.

The Marquis of Londonderry was received in audience by the King this morning, when His Majesty invested him with the Insignia of a Knight of the Most Noble Order of the Garter.

His Majesty held an Investiture in the Ball Room of the Palace at 11 o'clock.

The following were severally introduced into the presence of His Majesty, when the King invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted:—

The Distinguished Service Order and the Military Cross and Bar.—Flight Lt. Geoffrey Bowman, R.A.F. (also received the Distinguished Flying Cross).

The Most Excellent Order of the British Empire.—Member.—Military Division.—Capt. John Walker, R.A.F.

His Majesty then conferred decorations as follows:—

The Distinguished Flying Cross and Bar.—Maj. John Morrison, R.A.F.

The Distinguished Flying Cross.—Flight Lt. Arthur Randell, R.A.F.; Lt. John Bacon, R.A.F.; Flying Officer Cecil Bouchier, R.A.F.; Lt. Edward Wheatley, R.A.F.; and Sec. Lt. John Brown, R.A.F.

The Air Force Cross.—Sqdn. Ldr. Maurice Wright, R.A.F.; Capt. Thomas Hayes, R.A.F.; and Capt. Harry Robins, R.A.F.

NAVAL.

Admiralty Appointments.

The following appointments and promotion have been made:—

Promotion.—Lieut.—C. J L'Estrange-Malone, M.P, to rank of Lt.-Comdr., seny. Dec. 15th.

Dec. 20th.—Surg. Lieut.—N B. de M. Greenstreet, to "Royal Ark."

The R.N.A.S. at Dunkirk.

It is stated in the order issued by the Admiralty on Dec. 17th that service with the R.N.A.S. at Dunkirk, August 4th, 1914, to midnight, Nov. 22nd-23rd, 1914, does not qualify for the clasp to the 1914 Star.

MILITARY.

War Office, Dec. 15th, 1919

The Secretary of State for War has received three dispatches from General Sir Reginald Wingate, G.C.B., G.C.V.O., G B.E., K.C.M.G., D.S.O., on the military operations in the Hedjaz from June 9th, 1916, to Jan. 31st, 1919, from which the following extracts are taken:—

Dispatch No. 1, from Cairo, dated June 25th, 1917:—

"When the Arab campaign opened on June 9th, 1916, the Turks were to great extent taken by surprise . . ."

"Early in October, although the pilgrimage had been carried out without hindrance, the situation in the Hedjaz had become a serious one, and the threatened [Turkish] advance from Medina *via* Rabegh to Mecca appeared to have a considerable chance of success. . . ."

"On Oct. 30th, 1916, incidentally the day after the Sherif had declared himself King, approval was given for the dispatch to Rabegh of a flight of aeroplanes, which it was hoped would prove of much value in the operations impending. The flight was dispatched to Rabegh early in November. . . ."

It was then decided that the only way of removing the threat against Mecca and securing the fall of Medina was to undertake raiding tactics against the railway and the enemy's lines of communications, from the North.

"The large consignments of supplies and munitions which it has been necessary to send to the Hedjaz have been almost entirely supplied by the Egyptian Expeditionary Force, and the Commander-in-Chief has also furnished most valuable assistance in the form of a Flight of the Royal Flying Corps, an Armoured Car Section, and other details. . . ."

In his recommendations at the end of this dispatch Sir Reginald Wingate says:—

"The Royal Flying Corps Flight, under the command of Major Ross, D.S.O., has more than maintained the traditions of the Corps. Exceptional difficulties of climate and terrain have been encountered and surmounted in circumstances of peculiar hardship, valuable reconnaissance work has been carried out, and the support, both moral and actual, which the Flight has given to the Arab Forces is incalculable. In this connection I am greatly indebted to Brigadier-General W. G. H. Salmond, Commanding the Middle East Brigade, Royal Flying Corps, for his unfailing help. . ."

Dispatch No. 2, from Ramleh, dated June 15th, 1918:—

"Towards the end of July, owing to the severe strain on both pilots and machines, of continuous operations under conditions obtaining in Arabia during the intense heat of the summer months, it became necessary to withdraw the Royal Flying Corps detachment from the interior to refit at Wejh, and a month later the unit returned to Egypt after nine months of exceptionally arduous and valuable service in the Hedjaz. . . ."

"Early in November the last Turkish aeroplane remaining in Medina was brought down with rifle fire by the Arabs near Bir Nasif. The wrecked machine was, in fact, subsequently recovered by the enemy and returned by rail to Medina, but since that date no further aerial activity has been shown by the Turks south of Maan. . . ."

Dispatch No. 3, from Cairo, dated Dec. 27th, 1918:—

"At the date of my last dispatch of June 15th the isolation of the enemy's Second Composite and Hedjaz Expeditionary Forces had been effected. . . . Since then the Turkish garrisons in the Southern Hedjaz, including that of Medina, were entirely cut off from communication with the outside world, with the exception of a single aeroplane dispatch, which reached Tebuk from the north about the middle of August. . . ."

The Punjab Rioting.

Before Lord Hunter's Commission, which is inquiring into the measures taken to repress the rioting in the Punjab last April, Lieut.-Col. Frank Johnson, D.S.O., who was in command in the Lahore civil district, gave evidence in respect to the numerous orders he issued, which have been the subject of strong criticism in the Indian Press. "There was much excitement at Lahore, and in the evening a crowd of some 6,000 people advanced to the telegraph office. The police had to fire to induce the crowd to return. The state of the city was such that no white man could enter it. The police had to evacuate it, and it was given over to the mob. On April 12th he was told to enter the city. He was supported by four aeroplanes. He previously made arrangements for two of the machines to fly as low as possible, and the pilots were instructed that if they received a pre-arranged signal they were to drop bombs 100 yards away from the head of his column."

The Afghan War.

The following telegram from India dated Dec. 15th has been received in London.—

On Dec. 10th the frontier constabulary at Gumatti, eight miles north of Bannu, were fired on by a gang which was successfully bombed and dispersed by aeroplanes.

Trouble on the Euphrates.

A semi-official statement issued on Dec. 19th says:—

The latest news from Deir-ez-Zor, on the Euphrates, is that the Arab forces are still in occupation of the town. Aeroplanes sent to reconnoitre the place were heavily fired on.

AIR FORCE.

An Echo of Loch Doon.

Mrs. Charlotte Tilke McAdam, of Craigengillan, Ayrshire, has raised an action to have it declared that the whole operation of the War Department in taking possession of her estate of Craigengillan in connection with the construction of the Loch Doon Aerodrome was unwarranted and illegal. Mrs. McAdam is claiming £150,000 compensation for damage done to the estate, where she states several picturesque spots have been destroyed.

Craigengillan is of considerable extent, and includes a portion of Loch Doon, where, in 1916, the War Department decided to establish a large school of aerial gunnery.

The Department, the plaintiff says, had no authority to carry out the undertaking, and the scheme was not designed to meet any emergency, but to provide a school mainly intended for use after the war. The Department professed to act under the Defence of the Realm Act, but this, she maintained, did not apply to this undertaking and conferred no warrant for the invasion of her property. The plaintiff also refers to the operations undertaken at Bogton and Bogton Loch, where she says £60,000 to £80,000 was spent, and the place was never used as an aerodrome.

The Lord Advocate, in defence for the War Department, states that in taking possession of the plaintiff's property they acted strictly under the Defence of the Realm Acts and Regulations, and of the prerogative rights of the Crown. The establishment of the gunnery school was necessary, and its future would have depended on the course of the war. Its abandonment was due to physical conditions which had not been anticipated by those advising the War Department.

After considering other sites the General Officer Commanding the Royal Flying Corps selected Loch Doon as best suited to his needs. The difficulties due to the boggy nature of the ground and those due to rocks were fully considered, and it was part of the scheme to drain the bog and to raise the level of the Loch. Owing to certain difficulties the original plans were in part departed from as the work proceeded, and the need of taking Craigengillan House arose later. It was with great reluctance that it was taken.

Lord Blackburn, before whom the action was raised, has, of consent, stayed procedure in the case meantime.

The First R.A.F. Cadets.

The following are declared by the Civil Service Commissioners to be the successful candidates at the competitive examination held in November, 1919, for Cadetships at the Royal Air Force Cadet College; but their admission is conditional on their having passed the medical examination. A table of marks will be sent to each candidate as soon as possible.

	Marks.
*Mills, George Holroyd	9908
Buttar, Charles Philip	9295
*Henslowe, Francis Arthur	9108
Huxham, George Herbert	9098
*Shepherd, Gordon Carruthers	9050
Barrett, James Burney	8929
*Revington, Arthur Pethick	8872
Wilcock, Watkin	8687
Shortt, Ronald Graham	8673
Brook, William Arthur Darville	8485
*Porter, Nicolas Arthur	8265
Waite, Reginald Newnham	8249
Taylor, John Edward	7812
*Murphy, Terence Cyril Edmund	7402
*Stone, Ralph Ashinhurst Bird	7394
*Johnson, Sidney Holroyd	7257
Loch, Desmond Reginald	7131
Rowe, Frank Charles Thorn	7098
Boultbee, Henry Leonard	7093
Mangles, Roland Arthur Ross	7043
*Brown, John Redvers	7041
Muir, James Errol Ross	6871
Connolly, Sylvanus George	6865
Hayter-Hames, Noel Cecil	6810
Faithfull, Arthur Frederick	6797
Berridge, Thomas Donald	6707
*Combe, Gerard	6371
Boyd, Eric Alexander	6351
*Keightley, Charles Frederic	6347
Gay, George William	6320
Mackay, Malcolm Bruce	6308
*Whelan, Robert Darley	6302
	Marks
Lindsay, Humphrey David Richard Pelham	6239
Martin, John Leslie	6016
Goss, Eric Oliver	5943
Pontifex, Rupert William	5811
Griffith, William Scott de Gorrequer Delmage	5778
*Kearon, Hubert Vernon	5771
Desmond, Thomas Joseph	5768
Fleming, Theodore Slade Singleton	5689
Mitchell, Frederick George Stewart	5686
*Davis, John Houston Alexander	5651
*Gore, Charles William	5643
Spicer, Geoffrey Hardy	5621
*Bernard-Smith, George Christopher Bernard	5490
*Cooper, Ralph Alexander Byrne	5438
Glenn, Robert William Lowry	5115
Hawtrey, John Gosset	5086
*Falconer, Colin Logan	5071
Hayter, Matthew Charles	5054
*Spaight, Robert Henry Seymour	4973
Cooke, Desmond Aubrey Robert Bancroft	4938
Springfield, Cecil Montague Oakes Osborn	4909
*Lacey, Ernest Vair Sleigh	4807
Watts, George Edward	4776

* These candidates have received 400 marks for military efficiency.

A Territorial Air Force.

It is reported that there is a movement on foot in Leeds to form a small voluntary reserve force in connection with the R.A.F. The Blackburn Aeroplane and Motor Co., Ltd., have offered their aerodrome at Brough for training facilities, and it is hoped that the aerodromes at Tadcaster and Sherburn can also be used.

The Traditions of the R.A.F.

The Chartered Accountants' Students' Society held their annual dinner in the Connaught Rooms under the presidency of Sir William Plender on Dec. 17th. Air Marshal Sir Hugh Trenchard was among the guests.

In responding for the Imperial Services, Sir Hugh said that many traditions had been built up during the war, and among them the air spirit had proved itself equal to the older spirit of the Navy and Army. As an example of this, he mentioned that when Mannheim was bombed by half a squadron of the Air Force and only one machine returned, the remainder of the squadron went up without orders and turned what at first looked like failure into a glorious victory. While the older Services looked to age to build up their traditions, the Air Service looked to youth. Great as was the necessity for economy in these days, the necessity for maintaining our naval, military, and aerial supremacy was still greater.

R.A.F. Rugby Football.

The R.A.F. played Swansea at Swansea on Saturday, Dec. 13th, with the following result :—

R. A. F., 2 goals, 10 points; Swansea, 1 dropped goal, 1 penalty goal, 1 try, 10 points.

This match at Swansea was played in a downpour of rain, which was fortunate for the R.A.F., as the ball was very slippery and extremely difficult to hold, and as the Swansea backs had the ball very frequently. The R.A.F. forwards played a capital game, and Damant, at full back, played his soundest game this season. Swansea were the first to score by means of a penalty goal, but shortly before half-time McLennan picked up and scored a well-deserved try near the corner flag, which Dalziell converted brilliantly. No further score happened before half-time. R.A.F., 5 points; Swansea, 3 points.

In the second half Swansea got a drop goal and another try, while Maxwell dashed over for the R.A.F. and Dalziell converted. Swansea battered away at the R.A.F. line but could not penetrate the defence, and so the game ended in a draw of 10 points each. Considering that over half the team had not played together before, and as it was the first game this season for at least five weeks, it was a very creditable performance.

The R.A.F. Team :—Full back, Flying Officer Damant; three-quarter backs, Squadron Leader Penny, Flying Officer Churchman, Flight Lieut. Scott, Flying Officer McLennan; half backs, Flying Officer Dalzieli, Flight Officer Massey; forwards, Wing Commander Breese, Flight Lieut. Scroggs, Flight Lieut. Simpson, Flight Lieut. Usher, Flight Lieut. Cripps, Flight Lieut. Gray, Flight Lieut. Whitworth, Flying Officer Maxwell.

BRAZIL.

A Coming Visit.

The Brazilian Government have selected the Brazilian aviators, Señors Alzir Rodricues and Bento Ribeiro to proceed on a visit to England and the United States in order to view aviation works.

A Purchase.

It is understood that the Brazilian Government have bought 30 aeroplanes for the Brazilian army from France.

POLAND.

One is indebted to the "Daily Mail" of Dec. 9th for the following story :—

The first two British officers to be given commissions in the Polish Army are Lieut. J. F. D. Tanqueray, D.F.C., and Lieut. L. S. Woodhouse, Croix de Guerre. Both were in the Royal Flying Corps during the war.

Interviewed by a "Daily Mail" reporter yesterday, Rear-Admiral V. Kloczkowski, Naval and Military Attaché to the Polish Legation, said he believed Lieuts. Tanqueray and Woodhouse are at present in Warsaw; their services would be employed with the Polish Flying Corps. Over 100 applications had been received, many from officers with very distinguished war records on the Western front. Only 25 commissions will be given to British officers meantime.

Officers are accepted in the Polish Army in the rank they held in the British Army. The engagement is for six months' service, renewal in periods of three months, with 30 days' leave every year. Rates of pay are 500 marks monthly for second lieut., 600 for lieut., 800 for captain. The spending value of a mark in Poland to-day is nearly equal to that of a shilling in the United Kingdom.

[Surely this case comes under the Foreign Enlistments Acts ?—Ed.]

U.S.A.

The following has been extracted from the official "Air Service News Letter," dated Nov. 25th, 1919.

Squadron Insignia Approved by the War Department.

Squadron Insignia Approved by the War Department.

The War Department authorises publication of the following from the Operations Division of the General Staff :

The Secretary for War has approved the insignia for 44 airplane squadrons, submitted by the Director of Air Service. These insignia are for use only on planes and on baggage for the purpose of distinguishing the different squadrons, and will not be worn as shoulder insignia by individuals. They comprise the insignia used in the A.E.F. by the squadrons actually organised in France, which saw action at the front.

First.—The American Flag.

Eighth.—A great American eagle, with the wings spread, holding the American Liberty Bell.

Ninth.—A silhouette showing the beams of three searchlights pointing upward and forming the numeral IX.

Eleventh.—A cartoon of Mr. "Jiggs" carrying a bomb under his arm.

Twelfth.—The Twelfth's insignia is not given.

Thirteenth.—The figure of death depicted by a skeleton running at full speed with a bloody scythe in his hand.

Seventeenth.—The great snow owl flying through the air ready to pounce upon the enemy.

Twentieth.—Three legs in a circle arranged in pin wheel fashion comprise the insignia adopted by the Twentieth Squadron.

Twenty-Second.—A number of stars in a ring with a large star with a tail, evidently a comet, superimposed, represents the 22nd Aero Squadron

Twenty-Fourth.—An American eagle pouncing upon the German dachshund which is running away with its tail between its legs.

Twenty-Fifth.—A cartoon of a masked headsman with an axe.

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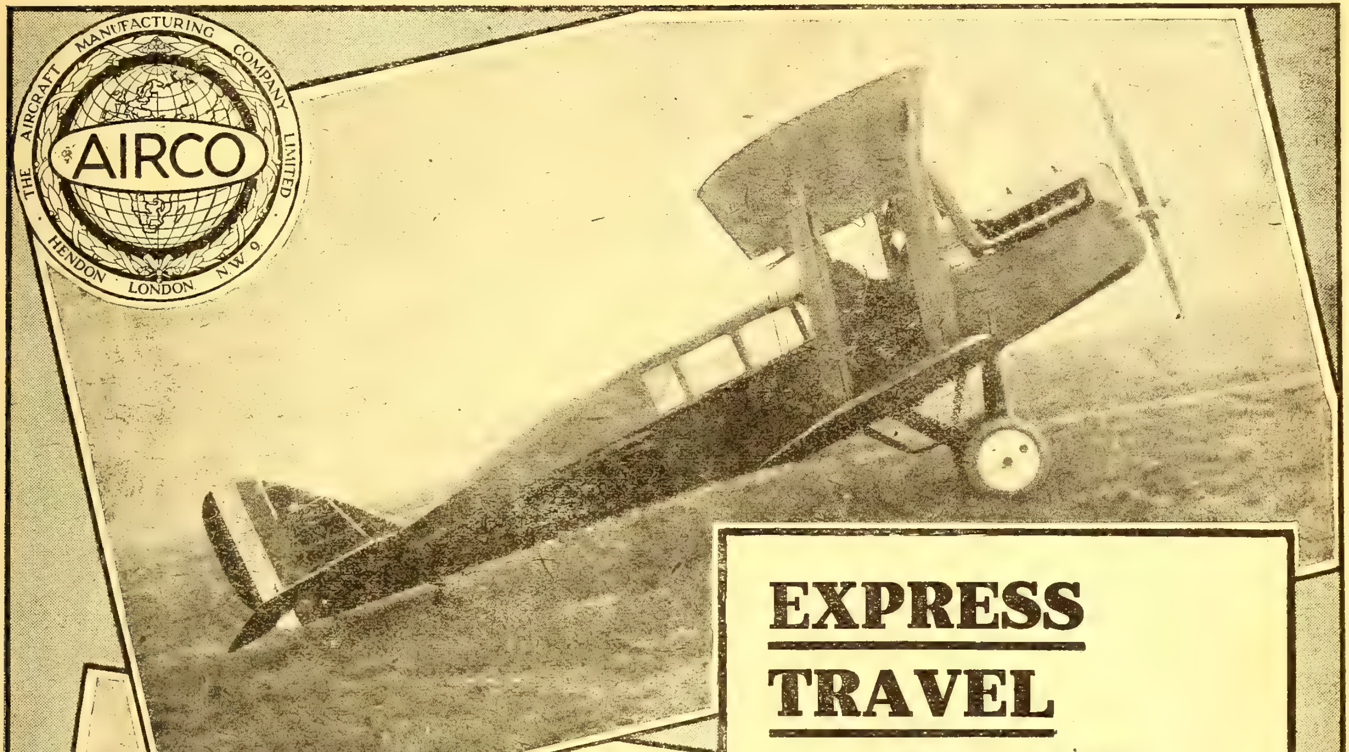

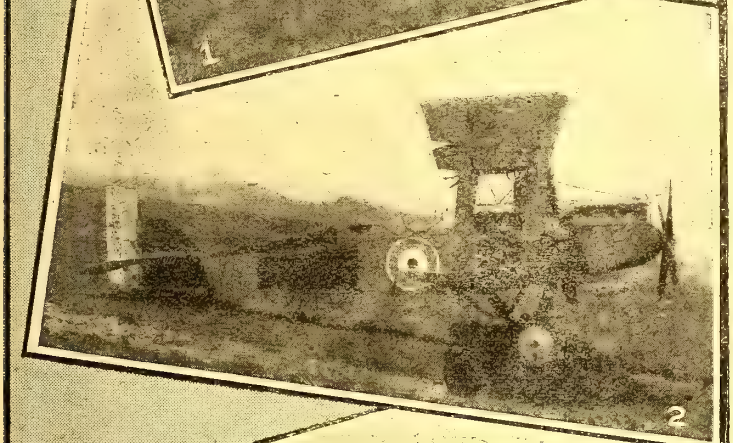

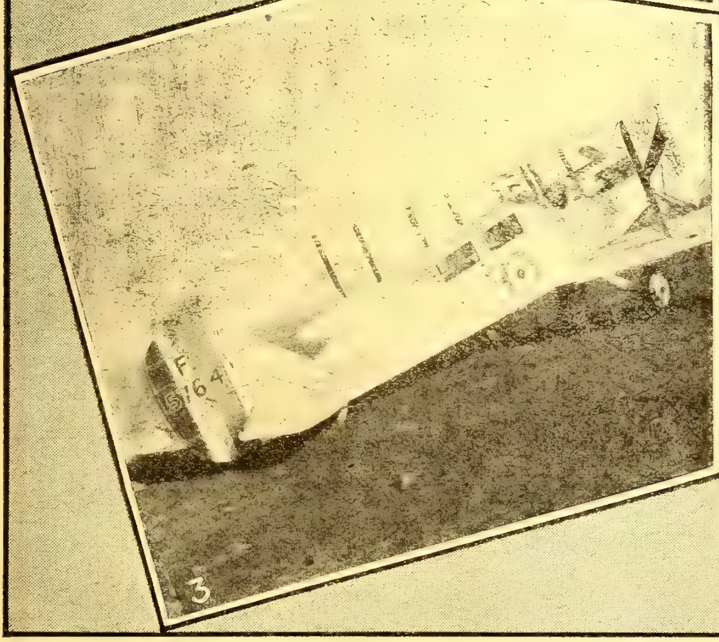

EXPRESS TRAVEL BY AIR

The remarkable reliability of the Airco machines which are running the Daily Air Service between London and Paris is shown by the following summary of flights and mileages :—

1. THE NEW AIRCO 16.

45 Flights were made during the first twelve weeks, with a total approximate mileage of 11,400 miles.

2. AIRCO 9B

37 Flights have been accomplished by this machine, covering an approximate total of 9,250 miles.

3. AIRCO 4A.

This well-known machine has successfully made no fewer than 95 flights between London and Paris during the first 12 weeks, covering a total distance of approximately 23,750 miles.

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Twenty-Seventh.—Another form of the American eagle, superimposed upon a large round spot.

Twenty-Eighth.—A painted American Indian looking to the left. Its headdress includes a single feather.

Forty-First.—An oval enclosing a scene in an African desert, a camel appearing in the foreground. This is superimposed upon the numeral V, showing that the squadron was one of the Fifth Pursuit Group.

Forty-Ninth.—A snarling wolf's head within a circle.

Fiftieth.—A silhouette cartoon of a Dutch woman similar to the one in "Dutch Cleanser" advertisement.

Eighty-Fifth.—Winged Cupid with a campaign hat sitting on the top of the world.

Eighty-Eighth.—A bucking broncho, ridden by a cowboy, all within a circle.

Ninetieth.—Pair of bones: the lucky number, seven, is uppermost.

Ninety-First.—A mounted knight in pursuit of the winged devil, whose blood he has already drawn by the lance

Ninety-Third.—An Indian head similar to that of the 28th, but in the reverse direction and bearing two feathers instead of one.

Ninety-Fourth.—The well-known "hat in the ring."

Ninety-Fifth.—The familiar kicking mule, poised on its front feet, ready to deliver a blow.

Ninety-Sixth.—The head and shoulders of a red devil, who prepares to launch an aerial bomb. This figure is placed on a white triangular-shaped background.

Ninety-Ninth.—A conventional American bison in silhouette..

One Hundredth.—The 100th Squadron shows the devil riding on an aerial bomb in flight.

One Hundred and Third.—An Indian head with a large war bonnet decorated with a swasticka.

One Hundred and Fourth.—Figure of winged sphinx, placed in a large circle.

One Hundred and Thirty-Fifth.—The Statue of Liberty with the rising sun as a background.

One Hundred and Thirty-Eighth.—A charging goat under full speed about to pass through the numeral V.

One Hundred and Thirty-Ninth.—An outline figure of flying Mercury.

One Hundred and Forty-First.—A great Bengal tiger playing with a German helmet and iron cross.

One Hundred and Forty-Seventh.—A cartoon of a rat terrier.

One Hundred and Forty-Eighth.—The head of Liberty in a circle.

One Hundred and Fifty-Fifth.—The head of a large arrow pointed upward.

One-Hundred and Sixty-Second.—A silhouette map of the United States.

One Hundred and Sixty-Third.—A silhouette of a cat with one eye closed standing on a bomb.

One Hundred and Sixty-First.—A grinning clown with a cap and ruff.

One Hundred and Sixty-Sixth.—Includes the sun with a pair of wings made of the American flag. In the foreground is a map of Europe, with Germany distinctly marked, while a hand, armed with an aerial bomb, hovers over it ready to drop the bomb.

One Hundred and Sixty-Eighth.—A winged skull in a circle.

One Hundred and Sixty-Ninth.—An unusual hieroglyphic somewhat similar to the monogram CB.

One Hundred and Sevevty-Fourth.—A black alley cat on a fence, silhoutted against the moon.

One Hundred and Eighty-Fifth.—A silhouette of a bat within a circle.

One Hundred and Eighty-Sixth.—Not reported.

Two Hundred and Thirteenth.—The head of an American Indian facing the right with two feathers in his scalp lock.

Two Hundred and Forty-Eighth.—A black cat wearing a broad grin and decorated with a large bow tie made of an American flag.

Two Hundred and Fifty-Eighth.—Reproduction of a lion, apparently carved out of stone.

Two Hundred and Seventy-Eighth.—Not reported.

Three Hundred and Fifty-Fourth.—A witch mounted on a broomstick supplied with model airplane equipment.

Three Hundred and Seventieth.—A triangle with a star in the centre.

Four Hundred and Eighty-Sixth.—A large star or comet, with six smaller stars in its wake.

Six Hundred and Thirty-Eighth.—A half-starved cat superimposed on the the numeral V, signifying the Fifth Pursuit Group.

Eleven Hundred and Fifth.—A winged elephant.

Twentieth.—An anarchist, ready to throw bombs.

Eighty-Ninth.—The front view of an American eagle in full flight.

A False Alarm.

It was reported on Dec. 20th that the Naval flying-boat N.C.4 (Lieut.-Comdr. A. C. Read) was several hours overdue. N.C.4 was engaged on a non-stop flight from Galveston to Mobile (Alabama). On the following day it was announced that the flying-boat was not missing but merely fog-bound at Grand Island, about 120 miles south-west of Mobile.

SUMMARY OF FOREST PATROL OPERATIONS, SEASON 1919.

The following summary of the work of the Forest Patrols operated from various aviation grounds of the U.S. Army is of interest:—

	Rock. 6/1-9/7	March. 6/1-9/7	March. 9/7-10/31	Mather. 6/1-9/2	Mather. 9/2-10/31	Red Bluff. 8/31-10/31	Fresno. 8/28-10/31	Oregon 8/1-10/8	Total.
Distance Covered.	36,854	46,291	22,252	31,128	16,530	29.239	19,709	33.715	235,724 miles.
Flying Time	410 hrs.	466 hrs. 56 m.	265 hrs. 54 m.	452 hrs, 56 m.	270 hrs. 34 m.	340 hrs. 39 m.	254 hrs. 26 m.	411 hrs. 24 m.	2872 hrs. 49 m.
Fires Discovered.	24	75	72	85	70	107	9	128	570
Accidents Involving Major Repairs,	0	3	0	1	0	2	0	2	8
Fatalities.	0	0	0	0	0	0	0	1	1
Airplanes used Daily.	2	3	2	2	2	2	2	2	17

THE CATTEWATER OLD BOYS CLUB.

The first meeting of the ex-officers and men who were stationed at the Seaplane Station, Cattewater, Plymouth, during the war was held at the Holborn Town Hall on Dec. 3rd in order to elect a committee to deal with all future dinners, reunions, etc., of this Club. Over 150 members were present, and it was decided to call the club "Cattewater Old Boys." The following Committee were then elected:—President, Mr. A. T. Sketchley, late Captain R.A.F.; secretary, Mr. Bosher; Mr. Kalber (late Lieut), Mr. Murphy (late Lieut.), Mr. Reid late Capt.), Mr. May, Mr. Ogle, Mamstree, Mr. Balch, Mr. Courtneidge. The first dinner will be held in London at the end of January. All members who were at Cattewater during the war are asked to send their names and addresses to Mr. Bosher, 33, Langdon Road, Junction Road, Highgate, N.

A PROBLEM.

The "Evening News" states that a correspondent at Wembley sent to the office of the paper a sample of washing "spattered all over with oil from the sky. The complete list of casualties was: 1 sheet, 1 vest, 1 white shirt.

"The problem is: Who is liable for the damage? Men learned in the law have been consulted. Some say the pilot is responsible, some say the owner of the machine, and others declare the maker of the engine should stand the racket.

"Until the Courts have fought it out the lawyers may well chuckle to themselves, 'It's an ill wind, etc.'"

One does not wish to appear unsympathetic, but one would point out to the owner of the washing that the cheapest and simplest course is to have the items re-washed unless he can sell them to a museum as souvenirs of Zeppelin raids.

HALF-WAY ROUND THE WORLD on "SHELL AVIATION" Motor Spirit.

Cable just received from the hero of the Great Australian Flight:—

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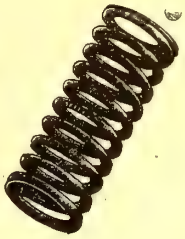

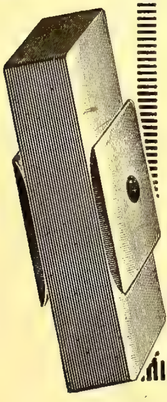

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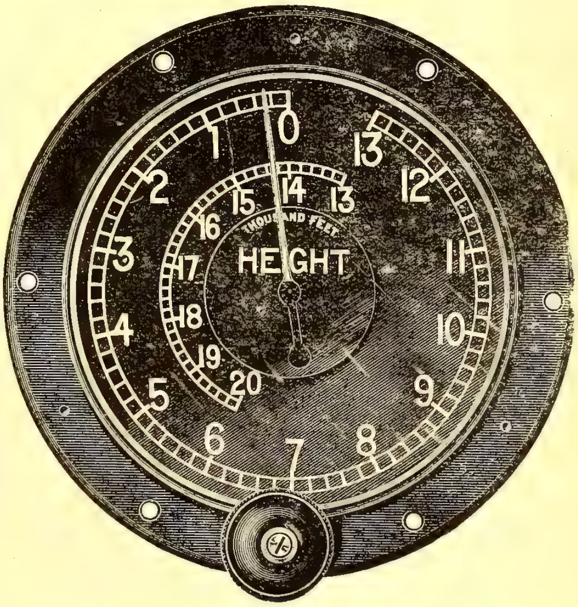

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AIRCRAFT IN PARLIAMENT

HOUSE OF LORDS.

THE DOUGLAS-PENNANT INQUIRY.

On December 15th LORD HYLTON, Captain Yeoman of the Guard, moved that the report of the Women's Royal Air Force Inquiry relating to Miss Douglas-Pennant's charges be considered, in order to give noble lords who wished to speak on the matter an opportunity of doing so. He hoped their lordships would not think him presumptuous if he added that he felt the whole House had watched with admiration the patience and dignity with which Lord Wrenbury conducted the business of the Committee during its protracted sittings.

EARL STANHOPE said he desired to make a statement of an entirely personal nature. On the second occasion on which he brought the question of Miss Douglas-Pennant's dismissal from the W.R.A.F. to the notice of the House, July 30th, he made the statement, referring to scandals in the force:—

"I will give your lordships only one instance, and that is an instance in connection with which I have seen nearly the whole of the evidence and spoken to several of the witnesses." At the time he made that speech he was receiving statements with respect to the conduct of the Women's Air Force generally. The impression left on his mind in regard to the particular instance referred to was that he was justified in using those words. He was now convinced that he was not so justified, and he could only express his profound regret to the House for having made the statement.

In regard to his more general statements about grave irregularities, those were based on information which he considered trustworthy; but he now desired, so far as he was concerned, unreservedly to withdraw any imputation against individuals which might be contained in what he said.

Their lordships would do him the justice to remember that he had never at any time joined in making charges of immorality against the Women's Air Force. There were many thousands of women in that Force, and such a charge would be as absurd as it was grossly untrue. There was, however, one statement to which he ought particularly to allude.

His statement on July 30th contained a specific allegation of immorality against certain people. He desired to withdraw that statement and allegation unreservedly; and in doing so to apologise to their lordships for having made it.

There were others to whom he desired also to apologise. In making his statement he mentioned no names, but in the course of the inquiry names were necessarily made public. He desired therefore to apologise to Colonel Janson and Miss Glubb for having made any allegation against them. He had already communicated with their respective solicitors apologising for his statements, and had paid the whole of Miss Glubb's costs in connection with the inquiry.

He regretted that on the several occasions he brought this matter before their lordships he made statements that were inaccurate, and therefore misleading, and he trusted their lordships would realise how sincere was the apology he made.

EARL CURZON, Secretary of State for Foreign Affairs, said the House had listened with sympathy and respect to the obviously sincere apology offered by the noble earl He did not desire to add to the difficulty and delicacy of the noble earl's position, but his personal explanation did not dispose of the case, because it was their lordships' House which by an almost overwhelming majority assumed a special responsibility in this matter; and it was fair to the House of Commons to recognise that it showed a juster perception of the character of this case than did some of their lordships.

In a short account of what had taken place he reminded the House that Lord Ampthill, who, he said, was far ahead of his colleagues in imputation, declared that the answers on the case given from the Government bench were wholly evasive and inaccurate. The solemn warning given by the Lord Chancellor on May 29th that their lordships in setting up a judicial inquiry would be taking a step which would lead to nothing but disaster and failure was ignored.

The Government declined to grant the inquiry, but subsequently a motion for the appointment of a Select Committee was carried in their lordships' House by 69 to 42. He thought then, and most of their lordships now thought, that a profound mistake was then made. But they were fortunate in obtaining the services of Lord Wrenbury as chairman of the Committee, and the tribunal over which he presided was an able and impartial tribunal.

The Committee's unanimous report stated among its findings that Miss Douglas-Pennant's charges of obstruction were not substantiated and that the accusations of immorality were wholly unsupported by evidence. It came, then, to this, that the charges which were so recklessly flung about, and had not spared authority, position, or sex, had completely broken down. Not one of the imputations made was sustained, and rarely, if ever, had there been an attack made by responsible persons which rested upon such flimsy foundations, and seldom, if ever, had such an attack, if delivered, met with such complete exposure and refutation

He passed to the particular question to which Lord Stanhope had referred, not in the least degree with any idea of adding to the feelings of natural mortification and self-reproach to which the noble lord had just given expression; he mentioned it only because it had a wider implication and meaning. The main reason why their lordships had acted as they had was that they relied implicitly upon the character and statements of a noble lord possessing the reputation which Lord Stanhope enjoyed.

He could not help alluding to the passage in the Committee's report which related to the charge concerning the relations of a military officer and a young lady. The noble lord, he thought, committed a grave error in sheltering himself behind the privilege of their lordships' House.

A young lady was left to lie for months under the cloud of a disgraceful charge. She was compelled to submit to the indelicacy of a medical examination, she was subjected in the witness-box to a most dishonouring cross-examination by counsel for Miss Douglas-Pennant, and it turned out in the end, as the noble earl had asserted, that he had not seen a single witness, and he did not even know who told him.

As to the general charges of immorality at Hurst Park, they were equally deplorable, and they turned out to be equally unfounded. That such charges should have been made, based upon such evidence or lack of evidence, was proof of the length to which in this case recklessness and malice were allowed to go. Let their lordships remember that the Committee was set up not to consider charges of immorality, specific or general, although the victims of those charges were the persons who suffered most.

Scarcely anybody who could be brought within the purview of this matter was spared. The most wounding charges were made against ladies such as Lady Rhondda, Dame Katharine Furse, against eminent politicians, such as Sir Auckland Geddes, and against distinguished soldiers, such as General Brancker.

If those charges had not been made under privileged conditions Miss Douglas-Pennant would have been answerable in damages and costs to a sum amounting to many thousands of pounds As it was, the total expenses to the State in connection with this case would amount to over £10,000, of which only £220, the cost of the shorthand writers, could be charged upon the vote of the House of Lords.

Such was the financial consequence of this procedure. He failed to see any single compensating advantage. He hoped no lord who would speak after him would endeavour to make the point that the Committee was justified because of the complete exposure of the charges made, because that would be tantamount to saying that charges had only to be made sufficiently scandalous and sufficiently numerous in order to justify their lordships in setting up a Select Committee to inquire into them.

He would like to say one word as to the position in the matter taken up by their lordships' House. He was convinced that their lordships acted from perfectly honourable motives, and led by those motives they took the law into their own hands, and three times rejected the advice offered them by responsible Ministers of the Crown. They acted no doubt in the interests of justice, but they undoubtedly gave the impression—this was not the least unfortunate aspect of the case—that they were doing for one connected with their order what they would have been less eager to do for one of a humbler station. He did not say that was a just impression, but they had only to look at the papers to see that that impression existed.

The result of it all was that a large sum of public money had been expended, an immense amount of personal suffering had been caused and most inadequately compensated by the vindication that had been received, and a precedent had been set up which he agreed with the Committee in saying that they earnestly trusted would not form a precedent ever to be followed again. He thought this experience would lead every one of them to be less quick and impulsive in their suspicions, more moderate in the censures that they sometimes were too ready to pass upon public servants, more scrupulous in the evidence they required in support of charges of a very defamatory character, and, above all, more careful as to how they set in motion the great prerogative which, as the Upper House of Parliament in this country, they enjoyed

The MARQUESS of SALISBURY said all their lordships respected Earl Stanhope for the very ample words he used in respect of the misinformation which he gave the House. But Earl Curzon was not content with speaking on that apology and the report of the Committeee, he also found considerable fault with their lordships' House for the action which the majority saw fit to take

After all, the Prime Minister himself said an inquiry ought to be held. Although he (the Marquess of Salisbury) did not vote for the inquiry, it was fortunate that the suspicion which the previous history of this question had engendered was cleared away.

Earl Curzon had also reproved their lordships. That was an unusual thing for a member of the House to do. What the majority decided was generally accepted and submitted to.

He regretted that the noble earl should have suggested that in connection with any action which the majority of their lordships' House took there was a suspicion abroad that they would not have so acted if the lady in question had not been connected with themselves. He characterised such an impression as absolutely false. There was not a member who voted with the majority who was not inspired with the pure desire to see justice done.

* * *

HOUSE OF COMMONS.

Dec. 16th.—The following oral answer was given:—

ARMISTICE CONDITIONS.

Mr. CHURCHILL, replying to Brig.-Gen. Croft, said that Germany had handed over 5,000 guns, 25,000 machine-guns, 3,000 trench mortars, and 1,700 aeroplanes in accordance with the terms of the Armistice. These were the numbers laid down

Dec. 17th.—The following written answer was given:—

MANSTON PARK STATION, MARGATE.

Mr. CHURCHILL, replying to Sir H Nield, said that land at Manston Park belonging to Mr. J. Proctor was taken under the Defence of the Realm Regulations. It is proposed that this station shall be permanently retained for the R.A.F. This decision has only recently been made and is subject to Treasury sanction. Any question of the owner sustaining loss can be discussed in the course of the negotiations which must take place when the Ministry is in a position to take final action.

A Memorial.

It is proposed to build a Memorial and Thanksgiving Church at Billericay, Essex, where Major Sowrey, D.S.O., brought down an enemy airship, in the raid of Sept. 23rd, 1916. A site has been presented and a fund started, contributions to which may be sent to Messrs. Barclay and Co., Billericay, Essex.

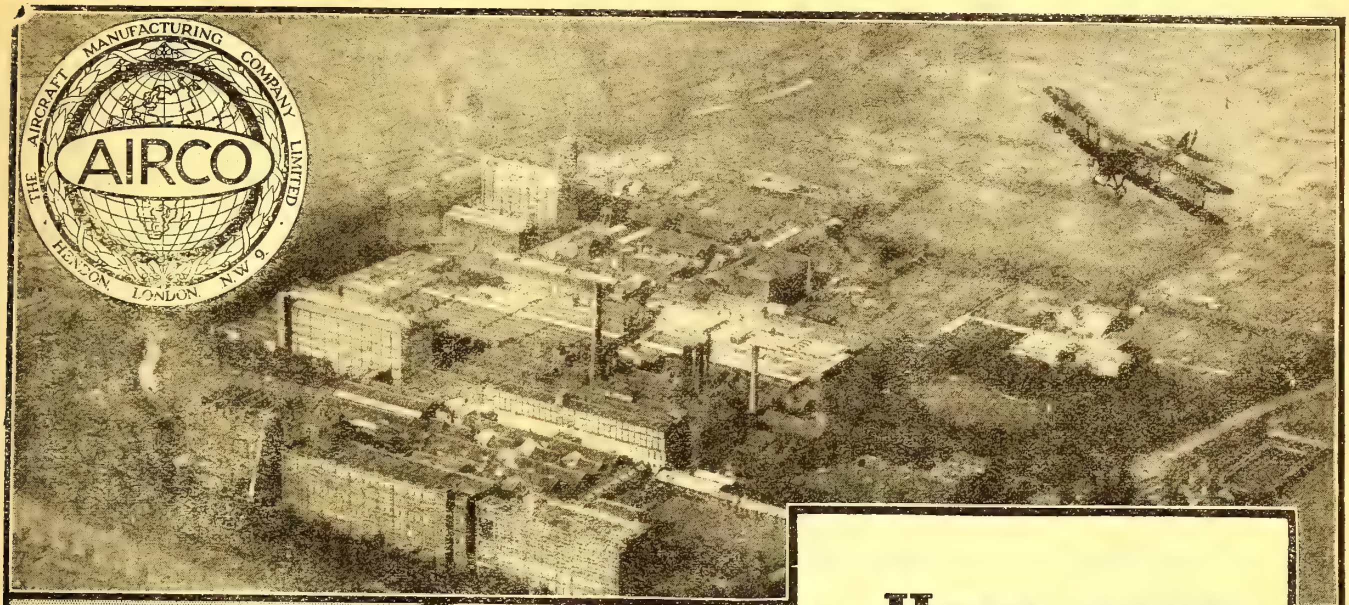
Palmers in the £10,000 Flight.

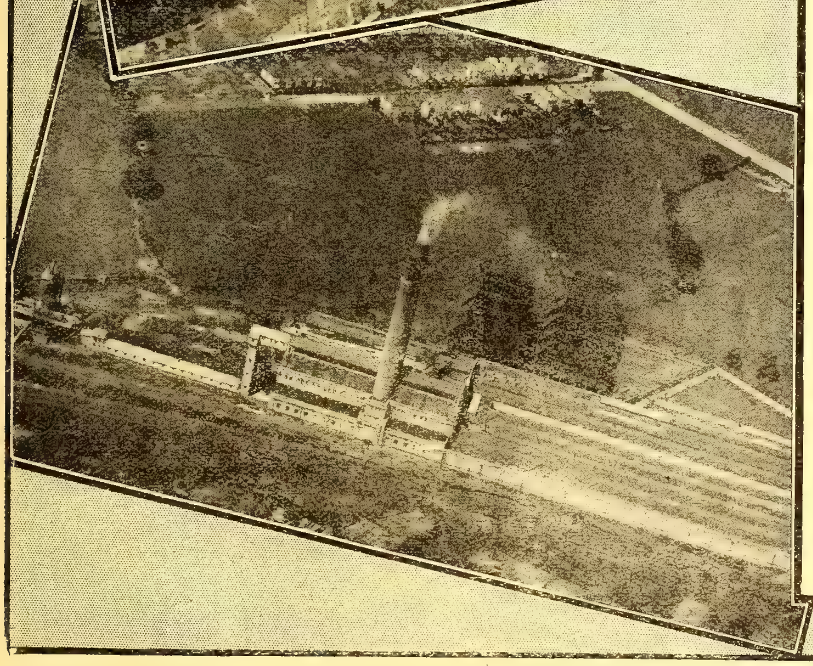
After giving all due praise to the magnificent performance of pilots and mechanics in this epoch-making flight, a word or two should be said for the landing gear that made this performance possible, necessitating as it did halts at improvised aerodromes and landing grounds between London and Australia.

The "Vickers-Vimy" was fitted with four 900 mm. by 200 mm. Palmer landing wheels, or to put it in language better understood by the man in the street, four wheels shod with Palmer Cord Tyres three feet high and eight inches cross section.

All landings on this long flight were made without a single hitch, the various stages being reeled off with clocklike precision.

Hounslow to Melbourne makes a very big line on the map, and we look forward to the circumnavigation of the globe at not a very distant date by a British machine, and in the landings which will be necessary en route, we have every confidence that Palmer landing wheels and tyres will play an equally successful part.





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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

The Customs at Hounslow.

The Air Ministry announced on Dec. 19th that Customs officers will not be in attendance at Hounslow between Dec. 25th and 28th inclusive. Steps have been taken, however, by which their attendance can be arranged for on short notice. Owners or pilots of aircraft who desire to obtain a clearance to or from the Continent on these days should give notice to the Civil Aerial Transport Officer at Hounslow, at least one hour before the attendance of the Customs officer is required.

THE CONTINENTAL AIR SERVICES.

The Airco Service.

From Dec. 15th to Dec. 18th the weather was officially reported to be totally unfit for flying, and no machines left Hounslow or Le Bourget on the Airco service.

On Dec. 19th the weather was better, and Lieut. Powell piloting a D.H.9, left Hounslow at 12.41 p.m., with one passenger and the mail. The passenger was dropped at Lympne at 1.05 p.m., having been flown from Hounslow at 168 m.p.h The machine arrived at Le Bourget at 2.20 p.m.

On the journey from Paris, Lieut. McMullin and Lieut. Campbell Orde, both piloting D.H.9s, left Le Bourget at 12.30 p.m. with the mail and parcels, and having encountered very bad weather over the Channel, landed at Lympne at 4.10 p.m. The mails and parcels were conveyed to London by train.

Owing to adverse weather conditions no machines left Le Bourget or Hounslow on Dec. 20th.

The Inquest on Lieut. Bradley.

A verdict of accidental death was returned on Lieut. S. B. Bradley at Croydon on Dec. 17th. He was the pilot of the Airco machine which crashed at Caterham on Dec. 11th, as noted in last week's issue of The Aeroplane.

R.34 and R.39.

It is learnt from a private source that the Scottish-built rigid airships R.34 and R.39 have been sold to a private English aeronautical company for use as commercial air vessels. Since the termination of the Transatlantic flight on July 13th of this year, R.34 has been lying in her shed at East Fortune, and has since only taken the air for a short time. The famous observation ship R.29, which occupied the same shed at the station, has been dismantled and broken up.

R.39, which is being built at a factory in the West of Scotland, will, on completion, leave for Pulham, Norfolk, along with R.34, where both, after final trials, will be reconstructed for passenger and goods-carrying. The sale was effected as a result of Mr. Churchill's speech in the House of Commons on Dec. 16th, when he stated that all British airships were to be sold for commercial use. The Naval Authorities will have, however, first claim on the use of the vessels in case of necessity.

Brooklands.

A correspondent writes :—

There has been a slight increase in the amount of flying done at Brooklands during the past week. Machines taking the air were "Vimy" commercial and bombing machines, Mr. W. G. Chapman's 90-h.p. Curtiss D.H.6, one or two Sopwiths of various types, various Martinsyde F.4s and "A" machines, and the Vickers "Viking," amphibian, on which the late Capt. Sir John Alcock, K.B.E., D.S.C., crashed, and which he was testing at Brooklands. The flying-boat hull of this machine was unmistakable in flight. The machine appeared to be flying satisfactorily and to have a fair speed.

Great gloom prevailed at the Weybridge works of Vickers, Ltd., after the hearing of the news of the death of Capt. Sir John Alcock. He was greatly esteemed, respected, and admired by the workpeople, and was a familiar figure at the factory. It was reported that the "Viking" was in perfect flying condition when he left Brooklands for Paris, and that it appeared to be flying well as it left the aerodrome.

Leeds.

Commander J. L. Cope, B.A., F.R.G.S., F.Z.S., who is to command the British Imperial and Antarctic Expedition to start from England in June, 1920, is taking with him a Leeds-built Blackburn "Kangaroo." The machine has already been bought and removed from the city.

The coming expedition, which, it is expected, will extend over five years, is the first on which an aeroplane has been taken. It will be carried to the last permanent winter quarters, whence trips will be made in the direction of the Pole in order to report on the conditions. As the party advance, food and other necessaries will be carried by this means from the base.

Newcastle.

A correspondent writes :—

The City Council here are having plans prepared for sites for new aerodromes in two different localities, one at Kenton Road, one mile west of Moor Aerodrome, and second at Denton Road, two miles west of Moor Aerodrome. Meanwhile, all aviators are using Town Moor Aerodrome.

The Berkshire Aviation Co. started taking up passengers at Newcastle on Dec. 8th, and finished on Dec. 22nd, when they went to Edinburgh to give another "Flying Week." They are one of the only firms in Great Britain to continue taking up passengers in the winter. Glasgow will be visited after Edinburgh.

Their motto is :—

" Rain, Shine, Snow or Blow,
Pay your Quid and up you go."

Sheffield.

Capt. C. A. Lewis, M.C., of the aviation department of Vickers, Ltd., has drawn up for the Sheffield Development Committee a suggested scheme for the establishment of a daily air service between Sheffield and London. Two aeroplanes would fly from Sheffield to London in the morning and two others would fly from London to Sheffield in the afternoon. At a cost per passenger per journey of £8, the undertaking would, it is estimated, yield 10 per cent. on an approximate capital outlay of £50,000.

AUSTRALIA.

Reuter telegrams, dated Dec. 20th, state that Capt. Ross Smith, on his flight across Australia, was obliged to land at Anthony's Lagoon, owing to a broken airscrew. This was repared, and he expected it to last until he reached Sydney.

He was next reported at Camonweal, and reached Cloncurry (Queensland) on Dec. 20th. The distances of Anthony's Lagoon, Camonweal, and Cloncurry, north-west of Brisbane, are approximately 1,300, 1,090, and 930 miles.

Flights from Tasmania.

The Bass Straits which separate Tasmania from Australia were flown across for the first time on Dec. 15th by Lieut. Long in an Alliance aeroplane. A few hours later a Sopwith machine arrived in Tasmania from Melbourne.

NEW ZEALAND.

A correspondent writes from Wellington :—

Aviation yet is in its infancy here, but soon it is hoped that both the Government and private firms will get busy. The climatic conditions of the Dominion are dead against aviation, and so it is extremely probable that the fight for supremacy will be most interesting and exacting. The continual gusty winds and the mountains afford no help to aviation.

It is believed that an important commercial venture is shortly to be started in New Zealand. A concern, which will form part of, or be connected with, the Larkin-Sopwith Company of Australasia, intends to begin operations. The headquarters will probably be at Auckland, where a flying school already exists, but aerodromes will be built in all the main centres. The company proposes to sell machines, institute flying lines, and undertake commercial flights, etc.; in fact, its operations will embrace everything practicable from a commercial aspect.

Passenger services will be instituted between all the principal cities. The main lines will, no doubt, be between Wellington, the capital of New Zealand, and Auckland, and Wellington and Christchurch and Dunedin. Auckland and Christchurch are the only two centres where aerodromes exist at the present time; and, in both cases, they are the sites of flying schools. Seaplanes are mostly used at the former city.

192 miles per hour with a Lumiere Propeller.

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All French pilots insist on Lumiere Propellers for making new height and speed records. They know that this design gives them 5% better overall efficiency.

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Xmas

We are not such hardened business men—neither are you—as to deny that at this season of the year the whole atmosphere of Life is charged with the electricity of Goodwill. It envelops us—it wraps us round—it fills every corner of our mind—carries our thoughts to every corner of the earth where we have friends, business or otherwise—in every sphere it is the same, and on or about the morning of the day when this message first appears in print we shall each of us wake up with these old familiar words upon our lips—

A Merry Christmas

And may every reader of "The Aeroplane"—every customer of ours, past, present, and prospective—share in that merriment and find therein a joyful pause in the arduous round of everyday activities.

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Wellington will be a very hard nut for the company to crack. It is centrally situated and the leading seaport of the Dominion, but it is very windy and surrounded by hills. The aerodrome is likely to be situated at one of the bays, providing the ground can be obtained, or at Miramar or Trentham. But at all these places the difficulties which have to be overcome are very great.

The line between Wellington and Christchurch lies over Cook Strait, a narrow strip of often very treacherous sea. The Auckland-Wellington run is over land the whole way. Landing grounds will be very scarce, however. At present, the Air Adviser's report is anxiously awaited for.

Lieut. D. C. Inglis, D.C.M., of Christchurch, will be prominently connected with the running of the New Zealand concern. Lieut. Inglis left New Zealand with the "Main Body," and gained the Distinguished Conduct Medal on Gallipoli. After service in France he transferred to the Royal Air Force and served for some time in France in a fast scout machine.—C. H. B.

THE WEST INDIES.

The Latin-American Division of the Bureau of Foreign and Domestic Commerce has announced that an English aviation company known as the Bahamas and West Atlantic Avro Co., Ltd., has been incorporated recently under the laws of the Bahamas.

The company plans to establish a commercial and passenger air service between Nassau and Miami (Florida) in January, 1920. The service will ultimately be extended to other West Indian islands.

BRAZIL.

According to the monthly bulletin of the British Chamber of Commerce in Brazil, dated Oct. 31st, the preparations of Handley Page, Ltd., for instituting public air services in various Brazilian zones, and starting with a service from Rio de Janeiro, south to Pelotas (Rio Grande do Sul), are at an advanced stage.

CUBA.

Fifteen million dollars is to be appropriated by the Cuban Government to the purchase of aeroplanes and airships to establish aerial mail and passenger services to the United States and other countries.

The Third Pan-American Aeronautic Congress is to be held at Havana from Feb. 21st to March 1st, 1920, inclusive, and over 25,000 dols. will be awarded in prizes to the aviators participating in the aerial contests.

Mr. Hannibal J. de Mesa, the President of the new Aerial League of Cuba, has bought two 16-passenger and four 3-passenger aeroplanes in France for the purpose of establishing an aerial transportation line between Cuba and different cities in the United States.

An organisation known as the Aerial League of Cuba has been founded with the co-operation of the Aerial League of America, with which it is affiliated, and the Aero Club of America. The Honorary President of the League is His Excellency General Mario G. Menocal, President of Cuba. As above, Mr. H. J. de Mesa is the President.

DENMARK.

The Handley Page Tour.

The Handley Page aeroplane piloted by Capt. Stewart and Capt. Gran which flew from London to Denmark last summer has just concluded a number of demonstration flights in Scandinavia. The weather conditions met with were somewhat trying for aviation, as the country abounds with mountains and lakes, which fill the atmosphere with "lumps" and cross currents, apart from the difficulties such landscape presents in the event of forced landings.

On one occasion two snow ploughs had to be utilised to clear the ground before the machine could "take-off," and when it did start to run across the ground the slip stream from the airscrews sent great showers of snow seven feet high.

The machine gave exhibition flights at Copenhagen, Arrhus, and Christiania, where 454 passengers were given flights, including officials from the Legation. Great interest was taken in the aeroplane by the inhabitants and the flying officers stationed near Denmark. The latter had only a few Henry Farmans and Avros, and they were astounded when Capt. Stewart took an Avro up and carried out a few "stunts." Stunting is not a widespread art in Scandinavia, and Capt. Stewart on landing after a flight in which he mildly stalled the Handley Page, was enthusiastically congratulated on his excellent "loop."

FRANCE.

The Paris-Melbourne Flight.

After three ineffectual starts, owing to fog, M. Poulet left Rangoon at 8 a.m. on Dec. 8th, with the intention of alighting at Moulmein and thence proceeding to Bangkok. His engines were thoroughly overhauled at Rangoon.

When he had covered 100 miles and was flying at an altitude of more than 3,000 ft. above the mountains of Siam, a flight of vultures was encountered. One of the birds struck the right airscrew which broke, and a disaster was only narrowly avoided.

He made a successful landing in the mountains, and fitted a new airscrew, which he carried slung in his undercarriage. M. Poulet then returned to Moulmein, where he landed in the middle of the night.

The "Intransigeant" has opened a subscription for M. Poulet. The names of some of the most famous aviators of France are on the list, which totalled on Dec. 17th, over 5,000 francs.

Another Record.

A Reuter message from Paris, dated Dec. 20th, stated that Lieut. Roger, with two passengers, on that day reached an altitude of 6,000 metres, notwithstanding the fact that he had to fly through a dense fog during the first 4,000 metres. This is claimed as a record for altitude. The previous record was claimed by M. Poulet, who reached an altitude of 5,420 metres.

GERMANY.

The Handley Page machine piloted by Capt. Herne and Capt. Davis, which is flying to Warsaw, has continued its journey from Berlin, and reached Posen. The machine has created considerable interest, and in some cases alarm, among the German villagers, who are puzzled by the British marking and the unfamiliar appearance of the machine, which is not so well known there as in the Rhine provinces, to which it paid frequent bombing visits during the war.

HOLLAND.

At the beginning of next year, besides the aviation routes to be opened in Holland with connections to the South, there will be services between Holland and Germany, and Holland and England. It is also hoped to establish a service to the Dutch East Indies. The contracts for the service to England and probably for the Dutch East Indies have been given to British firms.

ITALY.

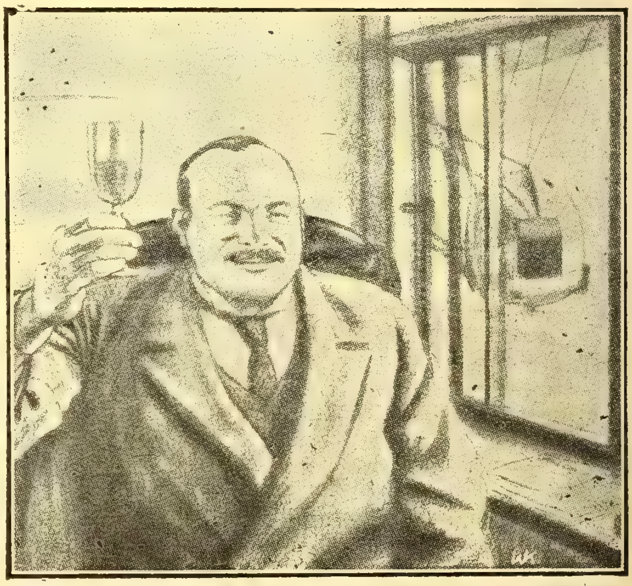
The Italian correspondent of The Aeroplane writes :—

The Federation of Aero Societies.

On 7th inst., at Milan, the Federation of Italian Aeronauts was formed for the purpose of uniting all those in any way engaged in aeronautical enterprise. The Turin "Association of Aviators and Aeronauts" joined the Federation en bloc, and steps were taken to approach the other existing societies on the matter. The Secretary of the National Aerial League also assisted. The Federation aims at being purely civilian.

A Successful Trial Flight.

The two Ricci Bros. of Naples send me news of their large seaplane, a three-engined 800-h.p. affair which began its trials on the 12th inst in the Bay of Lucrino, Naples, where the I.A.M. works are. The machine, not at full load, but with a useful cargo of 1,000 kilograms, reached a speed of about 170 the hour, considered quite good for a trial flight. It is



GERMANY'S RIGHTEOUS PRIDE.—The sketch, from "Luftpost," depicts a passenger in the new commercial Zeppelin "Bodensee," saying "*Prosit*! The country which produced such technical skill can never go under!"

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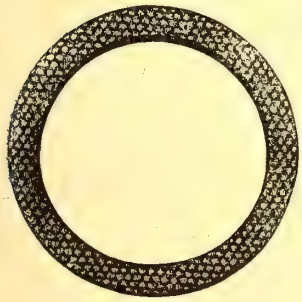

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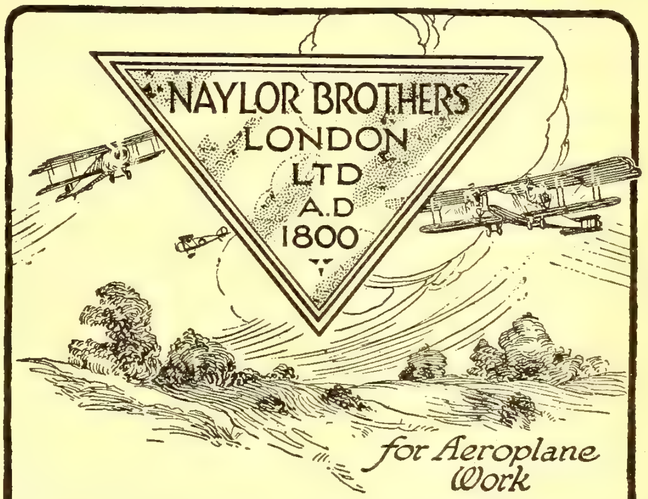

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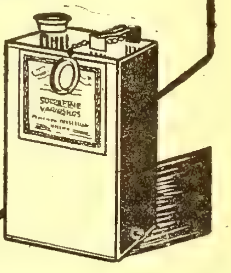

intended to carry 15 passengers and a good lot of post or cargo. I understand the pilot was Bornancin, of Pordenone.

The Government Competition.

It is stated by a Southern paper that 2,000,000 lire is the prize money that the Government intends to offer for the best results in the Small Machine and Large Seaplane Concours which it is promoting. There would be, according to the journal, about 11 months' grace before the machines have to toe the line before the awful judges.

For the Tokio Flight.

A Caproni triplane preparing for the Tokio flight left Milan and reached Rome in 3½ hours, piloted by Lieut. Abba, one day last week.

Next Year's Grand Prix.

The Grand Prix of the Italian Aero Club and Italian Aviation Society is to take the following lines this next year: A contest for very small single-seater flyabouts, ditto for fast machine carrying pilot, passenger and having fuel capacity of about 500 kilometres, and a competition for machines with large weight carrying properties which must fly with at least a third of their h.p. out of service. By desire of the club's trade members these competitions are to be international. In the two first the greatest speed range will be accounted specially praiseworthy.

The Mail Service to Greece.

The Government has reminded Greece of the Postal Service Contract obligations signed between the two countries some long while back and noted in these columns. One believes the reminder refers to the Corfu Airport. The other end is that at Brindisi.—T. S. H.

POLAND.

The London-Warsaw Flight.

Capt. E. D. C. Herne, the pilot of the Handley Page biplane which successfully flew through Germany, telegraphed to Berlin on Dec. 20th that he had arrived safely at Warsaw in a blinding snowstorm.

SWITZERLAND.

The Italian correspondent of The Aeroplane writes:—

German Machines.

A Zepp.-built machine with eight people on board flew from Neuchatel to the opening of the Geneva Airport ceremonies. One understands this machine was one of the 20 sold recently to a Swiss company and that they have two 270-h.p. engines. The Ad Astra firm have four ex-military pilots to fly these machines.

The Geneva-Lausanne Service.

The Geneva-Lausanne passenger service costs 75 (Swiss) francs each way and 130 francs for a return ticket. The craft used are three-seater S.I.A.I. waterplanes.—T. S. H.

Civil Flying.

When the winter sports are in full swing there will be on special occasions an aeroplane passenger service between Zurich and St. Moritz. At Lugano and elsewhere civil flying promises to be very popular.

The military aviation authorities are helping the private firms very greatly, and the military aerodrome at Dübendorff, near Zurich, is to be placed at the disposal of civilian flying.

Flying weeks have been arranged near many of the chief towns, and, in order to popularise flying, lists of recent civilian passengers are posted in the streets of Berne and other cities.

The Conditions.

There are many difficulties to face in flying in Switzerland. The available spaces for landing are very small, and the thinness of the atmosphere at possible fields on the higher slopes of the mountains makes landing a precarious business, as the machine must be "put down" at a speed far above its normal landing speed, or a "pancake" will result.

Landing would not be difficult in the long level valleys, but most of them are spoilt for flying purposes by telegraph and telephone wires.

Developments.

A new aerodrome of which great things are expected is being constructed at Thun on the shores of the lake. A considerable number of machines are being built in the factory at Thun, including the Ilaefeli D.H.5.

UNITED STATES OF AMERICA.

The Boom of Civil Aviation.

The Special Commission to Organise the First Aerial Race around the World have issued a report on the numbers of aeroplanes sold for civil purposes throughout the United States this year.

This Commission was appointed by the Aero Club and the Aerial League of America, and includes as members, Mr. Louis D. Beaumont, the President of the Commission; Mr. Alan R. Hawley, the President of the Aero Club; Mr. Henry Woodhouse, the Vice-President of the Aerial League; and Major Charles J. Glidden, who is the Executive Secretary of the Commission.

They have travelled to numbers of towns in the United States and obtained the available data of the present and prospective aeronautic activities. In Chicago alone 380 aeroplanes have been sold since June, and in the cities so far visited nearly 1,000 have been sold. These machines are used for passenger and goods-carrying.

The "Aerial Age" states that the Commission was told that people were unable to buy aeroplanes, as the manufacturers could not deliver fast enough, and could not supply large multi-engined aeroplanes or flying-boats. Also, the aeroplane dealers in the cities stated that they could have sold ten times the number machines they were able to obtain.

The paper also states that in some places large automobile dealers have taken up the aeroplane business and stated their readiness to place orders for 100 machines of each type for next year. One dealer who bought 100 aeroplanes last June sold them all within 60 days and then bought 40 more, which he sold, and could dispose of 200 more if he could get deliveries. A Chicago dealer sold 750,000 dols. worth of aircraft parts and supplies.

Now that the military restrictions are removed a great aeronautic boom has started which has practically no limit except a possible failure on the part of manufacturers to provide suitable aircraft in large enough numbers.

Commodore Beaumont, Major Glidden, and Mr. Hillman, of the Commission to Organise the First Aerial Race round the World, were to sail for Japan and travel through 32 countries organising this competition.

Cross-Country Flights.

A schoolboy and his mother were flown recently in a Curtiss "Oriole," fitted with a 150-h.p. K.6 engine from Houston, Texas to Mineola, Long Island, a distance of 2,500 miles. The journey was started on Sept. 28th, and Mineola was reached on Oct. 7th, after a three days' stop at Binghampton, owing to fog. The "Aerial Age" states that the flying time was 19 hr. 45 min., and only 36 gallons of petrol were used. The cost of the journey, including all expenses—hotels, meals, etc.—was less than 275 dollars, of 3 2/3 cents per mile per person.

Mr. Emery H. Rogers, the manager of the Syd Chaplin Aircraft Corporation, recently established a new record by flying from San Francisco to Los Angelos (538 miles) in 4 hours 8 minutes with one passenger. The machine used was a Curtiss "Oriole" (K.6 150-h.p. engine).

The Lawson air liner started on its voyage from Mineola early in September, and having stopped at Cleveland, Buffalo, Syracuse, Mineola, Washington, and Connellsville has arrived at Dayton, Ohio, a total of some 1,800 miles. The machine is to continue to St. Louis. Ten to 20 passengers have been carried on various stages of the flight. According to the "Aerial Age" of Oct. 13-20th, in one of the first trial flights one of the engines was stopped immediately after taking off and the machine climbed to 11,000 ft. with one engine alone.

The four-engined Handley Page biplane which was intended for the trans-Atlantic flight and recently flew from Parrsboro, N.S., to Greenport, L.I., was flown over New York City on Oct. 13th.

An Aerial Mail Service Project.

The Governor of Puerta Rico is endeavouring to obtain Federal aid in a mail carrying project between that place and St. Thomas. The mail is now carried by slow sailing vessels, and although the distance between the two islands is only 30 miles, the mail takes more than 24 hours to get across. A flying-boat could make the journey in half an hour.

It is also planned to open up an aerial mail service to Hayti.

In connection with the great sugar fields aeroplanes would be very useful for the use of supervisors in trips over the plantations, many of which cover thousands of acres. These inspections now take many hours by motor-car, and the roads are not good.

With an aeroplane it will be a matter of minutes where it is now a question of hours. Aerial views from time to time will give a splendid idea of crop conditions for the use of the sugar companies.

Replanting Forests by Aeroplane.

The Forestry Service has been urged by a representative to start a reforestation programme for the fire-denuded areas in the Sierra Madre range by using aeroplanes to scatter millions of tree seeds over these mountains as soon as the rainy season begins.

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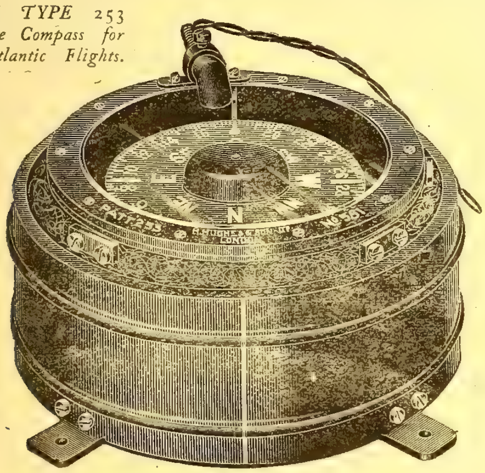

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GREAT BRITAIN.

MILITARY.

War Office, Dec. 15th.

Regular Forces.—Overseas Forces.—Canada.—Can. Forestry Corps.—Temp. Lt. D. Neil ceases to be secd. to the R.A.F., Sept. 3rd (substituted for "Gazette" notification, Aug. 2nd, p. 9953, incorrectly specifying date as July 14th).

War Office, Dec. 16th.

Regular Forces.—R.F.C.—Mil. Wing.—Equip. Officer, 3rd Class.—Temp. Sec. Lt. A. F. Nethey, Gen. List, Oct. 29th, 1917.

Memoranda.—Col. the Rt. Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., T.D., T.F., relinquishes the temp. rank of Maj.-Gen. on ceasing to be specially empld., Jan. 13th.

Sec. Lt. W. L. Rennie (attd. R.A.F.) retires, receiving a gratuity, Dec. 17th.

Territorial Force Reserve.—Col. (temp. Maj.-Gen.) Rt. Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., T.D., from Active List, to be Col., and is granted the hon. rank of Maj.-Gen., Dec. 17th.

War Office, Dec. 16th.

The King has been pleased to approve of the following rewards being conferred on Officers and other ranks of the Royal Air Force in recognition of gallantry in escaping from captivity while prisoners of war:—

Bar to the Military Cross.

Lt., T./Capt. (now Sqdn. Ldr.), T. W. Mulcahy-Morgan, M.C. (R. Ir. Fus.); Capt. A. J. Bott, M.C. (R.G.A., S.R.); Sec. Lt (now Capt.) A. J. Evans, M.C.; Pilot Officer (Hon. Flying Officer) G. P. Harding, M.C.; Flight Lt. E. W. Leggatt, M.C. (Wilts. R.); Lt. S. G. Williams, M.C. (Devon. R.)

The Military Cross.

Lt. L. J. Bennett; Lt. T. B. Bruce; Lt. S. E. Buckley (5th Northants); Capt. (now Maj.) D. B. Gray (Ind. A.); Flying Officer D. W. Grinnell-Milne, D.F.C. (R. Fus.); Flight Lt. G. S. M. Insall, V.C.; Lt. C. Kennard; Flight Lt. G. F. Knight (R.W. Surr.); Flying Officer P. C. C. Martin (Can. Fd. Arty.); Sec. Lt. P. A. O'Brien; Lt. F. J. Ortweiler; Lt. S. S. B. Purves (Sco. H.); Flt. Officer (Hon. Flt. Lt.) J. S. Poole, D.S.O. (K.R.R.C.); Flying Officer L. C. Russell (R. F's.); Flight Lt. L. D. Stewart, A.F.C. (R.G.A., T.F.); Flying Officer A. P. Taylor; Lt. J. K. Tullis (R.F.A.); Lt. L. A. Wingfield, D.F.C. (R.F's.).

The Military Medal.

21293 Sjt. J. Dempsey, R.A.F.; 143510 A./C./H. H. Harvey, R.A.F.; 46209 Sjt. W. Hawkins, R.A.F.

War Office, Dec. 17th.

Regular Forces.—Infantry.—Service Battalions.—Durh. L.I.—Temp. Sec. Lt. F. Hill, from R.A.F., to be temp. Sec. Lt., April 20th, 1918.

AIR FORCE.

Air Ministry, Dec. 12th.

The notifications appearing in the "London Gazettes" of the dates indicated below, appointing the following officers to short service commns., are cancelled:—Flying Officer G. A. F. Gibson (T.) (substituted for notification in the "Gazette" of Nov. 28th), Sept. 12th; Flying Officer E. A. M. Waterton (A.), Oct. 24th; Flying Officer B. Turner (A.P. T.), Nov. 11th; Flight Lt. G. M. Boumphrey (A.), Nov. 28th.

The rank of Observer Officer G. S. L. Hayward, M.C., is as now described, not Flying Officer (A.), as stated in the "Gazette" of Oct. 24th.

R.A.F.—Flight Lt. K. H. Riversdale-Elliot (A.) is granted a permanent commn. in the rank stated, with effect from Aug. 1st.

The following temp. appointments are made:—Staff Officer, 2nd Class.—(T.) Sqdn. Ldr. H. Stanley-Adams, D.S.C., Dec. 4th.

Staff Officer, 3rd Class.—(T.) Flying Officer O. W. de Putron, Nov. 11th.

Flying Branch.—Sec. Lts. to be Lts.:—A. McK. Matheson, Feb. 22nd; C. A. B. Caukwell (since demobilised), March 26th; H. Edge, May 28th; G. C. Lugg, June 6th; P. Fish, June 18th; M. Tallentire, July 5th; A. H. Allingham (since demobilised), July 20th; S. P. Watts, July 24th; A. Findley, July 30th.

Pilot Officers to be Flying Officers:—H. B. Williams, Aug. 23rd; K. W. Jones, Nov. 8th.

M. B. D. Whiteside (Lt., High. L.I.) (since deceased) is granted a temp. commn. as Sec. Lt., and to be Hon. Lt., May 31st, 1918.

Pilot Officer (Hon. Flying Officer) L. R. Hibbert (Capt., R. Lanc. R.) relinquishes his temp. R.A.F. commn. on return to Army duty, Nov. 18th.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. D. R. Bradley, Aug. 10th, 1918; Capt. N. MacMillan, M.C., June 10th.

Transferred to unempld. list:—Sec. Lt. C. E. Turner, Jan. 26th; Sec. Lt. T. C. Ormrod, Feb. 11th; Lt. H. Harris, Feb. 28th (substituted for notification in "Gazette," Oct. 10th); Lt. L. Smith, March 13th; Sec. Lt. R. W. Frost, March 22nd; Sec. Lt. S. A. Garratt, March 23rd; Lt. A. E. Francis, April 14th; Lt. V. P. Cronyn, April 19th; Lt. P. W. Plaxton, May 23rd; Capt. J. E. D. Boyd, June 1st; Lt. E. B. Corry, Sec. Lt. B. T. P. O'Brien, June 13th; Sec. Lt. J. D. Chisholm, Lt. W. H. Collins, Sec. Lt. H. C. Cook, Sec. Lt. W. E. Cook, Sec. Lt. R. A. Crecine, Sec. Lt. D. A. L. Curtis, July 12th; Lt. (Hon. Capt.) U. A. Currie, July 28th; Sec. Lt. S. A. Pindar, Aug. 8th; Lt. E. O. Ockerby, Aug. 15th; Lt. J. E. Croden, D.F.C., Aug. 16th; Sec. Lt. H. H. Peterson, Lt. G. E. Pfeifer, Aug. 22nd; Sec. Lt. H. F. Cullen, Aug. 25th; Lt. A. A. Crowson, Aug. 27th; Sec. Lt. A. G. Peake, Sec. Lt. H. W. Perkins, Aug. 29th; Lt. W. A. Clarke, Sept. 2nd (substituted for notification in "Gazette," July 15th); Sec. Lt. L. W. C. Pearce, Sept. 8th; Lt. L. Michell, M.C., Sept. 10th; Sec. Lt. G. S. Cowie, Lt. G. T. Polkinghorne, Sept. 13th; Sec. Lt. G. H. Cote, Sec. Lt. H. C. Cramer, Sec. Lt. G. H. Palmer, Sec. Lt. T. C. Porteous, Sept. 26th; Lt. H. C. Wright (substituted for notification in "Gazette," Oct. 28th, wherein this officer's rank was shown as Sec. Lt.), Sec. Lt. P. Anderson (substituted for notification in "Gazette" of Oct. 17th), Sec. Lt. B. O. Mayne, Sept. 27th; Lt. A. E. Bingham, Sec. Lt. A. L. Burran, Sec. Lt. E. J. Christie, Lt. R. L. Clapp, Sec. Lt. G. W. Cormack, Sec. Lt. D. M. Cowan, Sec. Lt. F. Baker Cox, Sec. Lt. M. Crawford, Lt. (Hon. Capt.) F. W. Crosbie, Sec. Lt. H. A. Henry, Sec. Lt. J. L. Hunter, Sec. Lt. C. W. King, Sec. Lt. W. Leith, Sec. Lt. W. H. McCardell, Lt. G. T. Miles, Sec. Lt. J. C. Morgan, Sec. Lt. L. J. Mousseau, Sec. Lt. H. P. Mowat, Lt. C. D. Nadeau, Sec. Lt. H. N. Nelson, Sec. Lt. J. H. L. Newby, Sec. Lt. B. J. P. O'Day, Sec. Lt. T. H. O'Connor, M.M., Lt. W. A. E. Pepler, Sec. Lt. R. M. Smith, Sept. 28th; Sec. Lt. C. V. Bradley, Lt. G. F. Bradley, Sec. Lt. R. D. Bradley, Lt. H. Bricker, Sec. Lt. R. E. Brown, Lt. A. M. Clermont, Lt. C. C. Frost, Sec. Lt. E. McC. Moir, Sec. Lt. J. E. Mutty, Sec. Lt. H. F. Nase, Sec. Lt. E. F. Newman, Lt. G. R. Norman, Sec. Lt. C. J. O'Connor, Sec. Lt. J. F. C. Oliver, Sec. Lt. J. A. Pearson, Lt. M. P. Pearson, Sept. 29th; Lt. J. F. P. Kirsten, Oct. 12th; Sec. Lt. R. Langlands, Oct. 13th; Sec. Lt. C. A. Thornton, Oct. 15th (substituted for notification in "Gazette" of Nov. 14th); Lt. H. S. Broughall, M.C., Oct. 17th; Sec. Lt. C. A. Goatcher, Oct. 21st; Lt. C. G. Cooper, Sec. Lt. R. E. Parker, Oct. 23rd; Lt. W. Irwin, Oct. 25th (substituted for notification in "Gazette," Nov. 4th, wherein this officer's rank was shown as Sec. Lt.); Lt. J. Fairbairn, Oct. 26th; Sec. Lt. J. B. Corstorphine, Sec. Lt. L. Edwards, Oct. 29th; Lt. J. H. W. Goodall, Nov. 4th; Sec. Lt. D. C. Evemy, Nov. 6th; Sec. Lt. D. P. Conyngham, Nov. 10th; Lt. J. Speaks, D.F.C., Nov. 12th; Sec. Lt. A. A. Boothe, Sec. Lt. D. Buck, Sec. Lt. A. S. Compton, Lt. M. A. O'Callaghan, D.F.C., Sec. Lt. C. W. Pattison, Lt. L. H. Phinney, Sec. Lt. W. G. Sibary, Nov. 13th; Lt. S. C. Goldsmith, Nov. 19th; Sec. Lt. C. A. Stubings, Nov. 22nd; Capt. R. H. Timmis, Nov. 26th; Lt. G. P. Edwards, Nov. 30th; Lt. L. D. Baker, Lt. E. M. Graddon, Lt. A. C. Townend, A.F.C., Dec. 2nd; Capt. S. E. Ball, D.F.C., Lt. G. Eastwood, Dec. 3rd; Capt. (actg. Maj.) E. A. de L. De Ville, Dec. 9th.

Capt. S. E. Adams relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Dec. 4th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—S. Scothill (caused by wounds), Aug. 4th (substituted for notification in "Gazette," Aug. 26th); J. J. Lanctot (contracted on active service), Sept. 28th.

Lt. C. W. D. Bell (Lt., P. of Wales Hrs.) resigns his commn., Oct. 1st.

Sec. Lt. G. R. Howard relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Dec. 5th.

Sec. Lt. R. Shillinglaw is antedated in his appt. as Sec. Lt. (O.), Aug. 8th, 1918.

The notification in "Gazette," May 31st, 1918, concerning Sec. Lt. H. P. Brumell is cancelled.

The notification in "Gazette," Nov. 5th, 1918, concerning Sec. Lt. E. G. Boyle is cancelled.

The notification in "Gazette," March 11th, concerning Sec. Lt. L. Edwards, M.C., is cancelled.

The notification in "Gazette," June 24th, concerning Capt. N. MacMillan, M.C., is cancelled.

The notification in "Gazette," Sept. 5th, concerning Sec. Lt. (Hon. Capt.) L. R. Hibbert is cancelled.

Administrative Branch.—Pilot Officers to be Flying Officers:—M. W. Taplin, Oct. 1st; A. J. Burge, Nov. 20th.

F. H. Bacque (Capt., Can. E.F.) is granted a temp. commn. as Capt., June 1st, 1918.

M. H. Toy (Capt., Can. Militia) is granted a temp. commn. as Capt., Aug. 1st, 1918.

Sec. Lt. E. McM. Spinney (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., and to be secd. to R.E., May 6th, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Capt. J. P. Cherry, M.C. (Capt. and Qrmr., Dur. L.I.), April 15th (the notification in "Gazette," May 2nd, is cancelled); Flying Officer F. D. Wright (Lt., S. Lancs. R.), Nov. 7th; Flying Officer G. B. Booth (Lt., Midd'x R.), Nov. 26th; Flying Officer A. Webb (Lt., 5th Dgn. Gds.), Dec. 1st; Flying Officer (actg. Flight Lt.) E. S. C. Brooks (Lt., Cameronians and Sco. Rif.), Dec. 3rd.

Transferred to the unempld. list:—Sec. Lt. F. Hind, June 5th; Sec. Lt. C. C. Cornett, Sec. Lt. W. D. Cram, July 12th; Sec. Lt. H. Pitkin, Aug. 3rd; Lt. E. L. Pape, Aug. 11th; Sec. Lt. D. Bright, Sec. Lt. N. R. Craig, Sept. 28th; Lt. J. H. Thompson, Sept. 29th, substituted for notification in "Gazette," Nov. 4th, wherein this officer's rank was shown as Sec. Lt.); Lt. V. N. Bonnes, Sec. Lt. P. H. Brodziak, Oct. 9th; Sec. Lt. W. J. Begley, Lt. C. T. L. Bowley, Lt. T. S. Cowperthwaite, Capt. H. C. Jones, Nov. 7th (substituted for notifications concerning the above-named officers in "Gazette," Nov. 21st; Sec. Lt. T. H. Nunn, Nov. 16th; Maj. H. Perry, Sec. Lt. K. M. Vaughan, Dec. 2nd, Sec. Lt. W. T. A. Jacob, Dec. 4th.

Capt. E. P. L. Baker (S. Staffs. R., S.R.) relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Nov. 29th.

Lt. W. J. Banham relinquishes his commn. on account of ill-health (contracted on active service), and is permitted to retain his rank, Dec. 4th.

Sec. Lt. J. G. Le Brun relinquishes his commn. on account of ill-health caused by wounds, and is granted the rank of Lt., Dec. 5th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—W. J. Cooper (contracted on active service), E. H. McEnery, Dec. 5th.

Technical Branch.—Sec. Lt. L. Hawkins to be Lt., Grade (A), Dec. 23rd, 1918 (this notification does not affect the notification concerning this officer which appeared in "Gazette," Aug. 29th).

Lt. J. H. Ferguson, M.B.E. (Sec. Lt., Extra Reg. Empld. List) resigns his commn., Dec. 13th.

Transferred to the unemployed list:—Capt. F. R. Freeman, March 7th; Sec. Lt. W. Gornall, March 22nd; Lt. V. P. Spurway, April 1st (substituted for notification in "Gazette," June 6th); Lt. E. Harrison, June 17th; Lt. T. F. Morris, Aug. 20th; Sec. Lt. N. L. S. Kilpin, Capt. B. R. Padmore, Sept. 28th; Sec. Lt. W. St. John Miller, Sept. 29th; Lt. B. E. Hobbs, Sec. Lt. (Hon. Lt.) G. H. B. Johnston, Sec. Lt. J. G. Wright, Oct. 9th; Sec. Lt. R. D. Chisholm, Oct. 17th; Maj. H. A. Oxenham, M.C., Nov. 10th; Sec. Lt. S. A. Smith, Nov. 21st; Capt. A. J. Hurst, Lt. J. H. F. Pilling, Dec. 2nd.

The surname of Sec. Lt. B. J. Beech is as now described, and not "Beach," as stated in "Gazette," Feb. 7th.

The notification in "Gazette," Dec. 31st, 1918, concerning Sec. Lt. J. S. Card is cancelled.

The notification in "Gazette," Nov. 25th, concerning Lt. H. D. Patterson is cancelled.

The notification in "Gazette," Dec. 24th, 1918, concerning Sec. Lt. L. Hawkins is cancelled.

Physical Training Branch.—Lt. J. Butterfield relinquishes his commn. on ceasing to be empld., and is granted the rank of Capt., Sept. 28th (substituted for notification in "Gazette," Nov. 7th).

Chaplains Branch.—Rev. W. Moffat, R.A.C.D., is granted a temp. commn. as Chaplain, with the relative rank of Capt., and is granted the relative rank of Col. while empld. as Principal Chaplain, March 7th.

The notifications in "Gazettes," Feb. 4th, March 28th, May 9th, May 20th, and June 24th, concerning the Rev. W. Moffat are cancelled.

Memoranda.—The following Cadets are granted hon. commns. as Sec. Lts.:—17078 H. J. T. Paige, March 6th; 175074 T. R. H. Nelson, March 23rd; 319291 P. S. West, April 18th; 105102 C. H. Eldridge, May 3rd; 33574 C. E. Proctor, Oct. 19th; 7688 H. C. Roe, Oct. 21st.

Flying Officer W. Myers, M.C., D.C.M. (Lt., North'd Fus.), relinquishes his temp. R.A.F. commn. on return to Army duty, Nov. 20th.

Sqdn. Ldr. (actg. Wing Comdr.) R. Hall, O.B.E. (Capt., R. Welsh Fus.), relinquishes his temp. R.A.F. commn. on return to Army duty,

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Nov. 1st (substituted for notification in the "Gazette" of Nov. 11th, wherein this officer was shown under "Flying Branch")

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—W. M. Harrison, W. Ramsay, Sept. 16th; W. G. Knight, Oct. 2nd.

Transferred to the unempld. list:—Capt. (actg. Lt.-Col.) F. Cookson, from (S.O.), Dec. 1st; Capt. G. T. Tait, from (S.O.), Dec. 3rd; Capt. (actg Maj.) A. Price-Reed, from (S O.), Dec. 4th.

AIR MINISTRY, Dec. 16th.

The King has been pleased to approve of recognition being accorded, as indicated below, to Officers and other ranks of the Royal Air Force, for gallantry while Prisoners of War in escaping, or attempting to escape, from captivity, or for valuable services rendered in the Prison Camps of the Enemy:—

BAR TO THE DISTINGUISHED SERVICE ORDER.

Wing Comdr. E. F. Briggs, D.S.O., O.B.E.

Wing Comdr. C. E. H. Rathborne, D.S.O.

MENTIONS.

The following have been mentioned in reports for valuable services while in captivity, and noted accordingly in the Official Records of the Air Ministry:—

Lt. A. T. Adams (Wilts R.); Flying Officer G. C. Atkins.

Lt. A. N. Barlow; Flying Officer C. B. Bird, M.C.; Lt. N. A. Birks; Lt. C. W. Blain, A.F.C. (deceased); Capt. G. K. Blandy; Flight Lt. B. J W. Brady, D.S.M.; Lt. Sir A. W. Brown, K B.E. (Manc. R.).

Flying Officer R. S. Capon (L'pool R.); Flying Officer G. L. Carter; Lt. H. K. Cassels; Flying Officer A. C. Collier; Flight Lt. E. J. Cooper, D.S.C.; Lt. A. H. M. Copeland; Lt. H. Cotton (Quebec R.); Lt. A. Couston (Aus. F.C.).

Sec. Lt. V. Dougall (Can. F.C.).

Lt. A. T. Easom; Pilot Officer H Edwards; Lt. W. B. Ellis (A.S.C., T.F.).

Wing Comdr. P. F. M. Fellowes, D.S.O.; Flying Officer J. J. Fitzgerald (R. Innis. Fus.); Lt. R. J. Fitzgerald (12th Glouc. R.) (deceased); Capt. G. C. Formilli (R.G.A.); Lt. C. E. French (6th Can.); Flying Officer E. J. Fulton (Ind. Army); Lt. E. P Fulton.

Flying Officer E. H. Garland (N.Z.F.C.); Sec. Lt. A. C. Geen; Lt. R. S. Gilbert; Sqdn. Ldr. (A./W C.) R. Grey, D.S.O. (Gren. Gds.); Lt. D. Grinnell-Milne (R. Fus.); Flight Lt. J. O. Groves.

Capt. W. L. Haight (R.F.A.); Lt. H. D. Hamilton (N.Z.F.C.); Lt. P. F. Heppell (R.A., T.F.); Flying Officer H. E. Hervey, M.C.; Lt. A. B. Hill; Capt. T. G. Holley (13th Can. R); Flying Officer F. N. Hudson, M.C. (E. Kent); Lt. E. P. Hyde (6th Ches R.).

Flying Officer H. Ibbotson

Lt. W. C. Jameson (R.N.V.R.) (deceased).

Lt. M. M. Kaye; Flying Officer H. Kirby; Flying Officer F. R. Knapp; Flying Officer W. E Knowlden (Bord. R.).

Flight Lt. C. Laurence; Capt. D. Leeson (7th Can. R.); Flight Lt. J. M. D'A. Levy; Lt. V. O. Lonsdale (R.F.A.).

Lt. H. O. Macdonald; Flight Lt. L. D. McKean; Lt. R. R. Macintosh; Lt. G D. McLeod; Flight Lt T. G. Mapplebeck (L'pool R.); Capt. F. W. Mardock; Flying Officer M. J. J. G. Mare-Montembault, M.C. (Yeo.); Lt. L. Marsh; Sec. Lt. N. H Marshall; Lt. H. W. Medlicott (deceased); Lt. H. B. O. Mitchell, M.C. (R. Innis. Fus.).

Lt. L. A. Newbold (Essex R.); Maj. R W. Nichol; Flying Officer L. G. Nixon

Capt. J. C. F. Owen, M.C. (Can. A.S.C.).

Lt. J. K. Parker (R. Sco Fus.); Lt. (A./Capt.) R. O. Purry; Capt. Sir R. J. Paul, Bt. (Egyptian C.S.); Flying Officer L. J. Pearson (R.E.); Flight Lt. S. L. Pettit (R. Fus.); Flying Officer A W. Phillips.

Capt. K. Rawson-Shaw (R.F.A.); Flying Officer C. Reece (4th Ches. R.); Flying Officer W. A Reeves (E. Surr. R); Flight Lt. G. H. Reid, D.F.C.; Flying Officer A. R. M. Rickards; Lt. J. G. Robertson (Can. M.R.); Flying Officer J. B. Robinson; Capt. W L. Robinson, V.C. (Worc.) (deceased).

Lt. N. C. Saward (R.A., T.F.); Lt. A. T. K. Shipwright; Lt. W. C. Short; Sec. Lt. A. S. Sinclair; Flying Officer A. H. Skinner; Lt. S. Smith, D.C.M.; Lt. C. Smythe, M.C. (Can. Fd. Art.); Flying Officer (Hon Flight Lt.) E. J. Strover (3rd Brahmans).

Lt. W. Taylor (R.F.A.); Lt. C. D. Thompson (Hon. A. Co.); Capt. R. J. Tipton (3/W.L. Bde., R.F.A) (deceased).

Flight Lt. H. C. Vereker.

Lt. (Hon. Capt.) E. G. S. Walker; Flying Officer A. A. Ward (R.A.); Flying Officer R. Watts; Flying Officer (Hon. Flight Lt.) T. R. Wells, M.C. (33rd Punjabis); Capt. T. W. White, D.F.C (Aus. F.C.); Sec. Lt. B. O. Wilkin (D.C.L I.); Lt. W. O. B. Winkler (R.G.A.); Lt. D. B. Woolley.

Capt F. C. C. Yeats-Brown, D.F.C. (Ind. A.).

No. 200449 Sjt.-Obsr. H. Brooks; No. 46448 Actg.-Corpl. O. W. A. Grant; No. 208940 Air-Mech. W. W. Higby; No 201866 Ldg.-Mech. D. Kennedy; No. 207252 Sjt. E. E. Smith.

FOREIGN DECORATIONS.

The King has granted unrestricted permission for the wearing of the undermentioned decorations, conferred upon the Officers and other ranks indicated for valuable services rendered in connection with the war:—

CONFERRED BY THE PRESIDENT OF THE UNITED STATES.

Distinguished Service Medal.—Air Vice-Marshal Sir G. M. Paine, K.C.B., M.V.O.; Air Commodore A. V. Vyvyan, C.B., D.S.O.; Air Commodore C. L. Lambe, C.B., C.M.G., D.S.O.; Air Commodore R. M. Groves, C.B., D.S.O., A.F.C.; Group Capt. (A./Air Commodore) E. M. Maitland, C.M.G., D S.O., A.F.C.; Lt.-Col. J. C. Porte, C.M.G. (deceased); Maj. G. C. Neilson.

Navy Cross.—Maj. W. C. Grant.

CONFERRED BY THE KING OF THE HELLENES.

Croix de Guerre, with Bronze Star.—Flight Lt. R. Whitaker, M.B.E. (Rif. Bde.).

Croix de Guerre, with Palme.—Flying Officer C. R. Keary, late 43rd Sqdn.; Observer Officer E. B. C. Betts, D.S.C., D.F.C.

CONFERRED BY THE KING OF ITALY.

Cavalier, Order of the Crown.—Capt. E. Newman (formerly R.A.O.C.).

Bronze Medal for Military Valour.—No. 3203 Sjt. G. A. Prowse, 17th Sqdn.

CONFERRED BY THE KING OF THE HELLENES.

Greek Medal of Military Merit, 2nd Class (with Silver Palm).—Wing Comdr. C. R. J. Randall, C.B.E.

Greek Military Cross, Class 3.—Maj. W. S. Scott, M.C., A.F.C.

CONFERRED BY THE SULTAN OF EGYPT.

The Order of the Nile, 4th Class.—Pilot Officer W. Pightling.

CORRECTIONS.

Actg. Matron-in-Chief Miss J. M. Cruickshank, R.A.F. Nursing Service (formerly attd. Q.A.M.N.S.I.), awarded the Royal Red Cross, 1st Class, in "Gazette" of Oct. 10th, 1919, is now correctly described.

Flying Officer C. A. Bouchier, D.F.C., awarded the Distinguished Flying Cross in "Gazette" of Nov. 18th, 1919, is now correctly described.

No. 214290 Signalman W. H. C. Hazlewood, A.F.M. (subsequently Cadet No. 181167), awarded the Air Force Medal in "Gazette" of Sept 21st, 1918, is now correctly described.

AIR MINISTRY, Dec. 16th.

R.A.F.—The notification in the "Gazette" of Aug 1st, appointing Capt. J. Gilmour, D.S.O., M.C. (A.), to a permanent commn., is cancelled.

The following temp. appt. is made at the Air Ministry:—Staff Officer, 1st Class.—(Q.) Maj. A. L. C. Neame, March 19th, and to be actg. Lt.-Col. till April 30th (substituted for notifications in the "Gazettes" of June 3rd and Nov. 28th).

The following temp. appt. is made:—Staff Officer, 3rd Class.—(P.) Lt. V. Stranders, and to be actg. Capt. whilst so empld., June 11th, 1918, vice Capt. A. E. Hartley (substituted for notification in the "Gazettes" of Aug. 6th, 1918, Oct. 4th, 1918, and Nov. 20th, 1918).

FLYING BRANCH.—Sqdn. Ldr. H. F. A. Gordon, O.B.E., to be Sqdn. Ldr. (A. and S.), from (S.O.), Nov. 1st.

Lt. C. D. Palmer (Lt., Arg. and Suth'd Highrs.) is granted a temp. commn. as Observer Officer on re-seconding from Arg. and Suth'd Highrs., Nov. 24th.

Sec. Lts. to be Lts.:—L. G. Spinney, April 27th, 1918; F. Ibbotson (since demobilised), Oct. 26th, 1918; W. Z. Grandi, Jan. 27th; L. A. West, May 8th; R. M. Guiney, May 30th; R. Tindle, July 5th.

Pilot Officers to be Flying Officers:—J. Duncanson, Aug. 2nd; G. W. Sweney, Aug. 3rd; S. C. Millar, Aug. 7th.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flight Lt. H. G. Coeby, M.B.E. (Lt., R. Mun. Fus.), Nov. 10th; Flight Lt. E. D Drew (Capt., R.W. Surr. R.), Nov. 13th; Flying Officer T. H. R. Riggs (Lt., Lincoln R.), Nov. 14th; Flying Officer G. R. Hunter, M.C. (Lt., Cam'n Highrs.), Flight Lt. H. H. James (Lt., Manchester R.), Nov. 17th; Flight Lt. A. A. A. Knight (Lt., R. Munster Fus.), Nov. 20th; Flying Officer E. Percival (Lt., Norfolk R.), Nov. 27th; Pilot Officer J. P. Stewart-Burton (Lt., Devon. R.), Dec. 4th.

Lt. H. J. Gearing (Lt., Highland L. Inf.) relinquishes his commn. on ceasing to be empld., April 29th.

Transferred to the unempld. list:—Lt. J G. Tennant, Jan. 1st; Lt. V. F. Toulmin, Jan. 6th; Lt. K. Hall, Jan. 21st; Sec. Lt. I. E. Cameron, Sec. Lt. G. W. Knight, Sec. Lt. A H. McLean, Sec. Lt. W. F. Matthews, Feb. 1st; Lt. J. Reid, Feb. 10th; Lt B. MacPherson, March 12th; Capt. T. E. Gorman, March 18th; Sec. Lt. J. Paterson, D.C.M., March 18th; I. H. H. Shorter (Dur. L.I.), March 27th; Lt. H. B Bell, M.C., April 5th; Lt. G. C. Body, April 11th; Sec. Lt. A. R. Webster, April 13th (substituted for notification in the "Gazette" of Oct. 3rd); Capt. A. B. Coupal, Lt. S. C. Farrington, Capt. R. H. B. Ker, Lt. S. S. Moore, Lt. N. R. Norman, Lt. W. M. Paterson, April 19th; Lt. J. A. Parkinson, April 21st; Sec. Lt. J. L. L. Thomson, April 29th; Sec. Lt L. D. Hamblin, May 4th; Lt. W. G. Robbins, May 7th; Sec. Lt. L. E. Tatton, May 16th; Sec. Lt. K. F. Cleal (substituted for notification in the "Gazette" of May 27th), Sec. Lt. A. M. Davidson, May 20th; Sec. Lt. H. L. Edwards, June 1st; Capt. C. E Blayney, M.C., June 3rd; Sec. Lt. A V. Colville, June 13th; Lt. W. Beart, July 11th; Lt. C. A. Burpee, Sec. Lt. J. M. Stevenson, July 12th; Lt. F. V. Bryant, July 29th; Capt. F. H. Bickerton, Aug. 7th; Lt. S. O. Pacey, Aug. 20th; Lt. E. M. Coles, D.F.C., Aug. 22nd; Sec. Lt. R. W. Corner, Aug. 29th; Sec. Lt. L. A. Hooper, Sept. 6th; Capt. F. C. C. Calder, Sept. 12th; Lt. S. S. Jones, M.C. (S. Lancs. R.), Sept. 15th; Lt. G. A. Cooper, Sept. 17th; Sec. Lt. B. A. Heeney, Sept 25th; Sec. Lt. J. V. Coupe, Sec. Lt. M. C. Dawson, Sept. 26th; Sec. Lt. A. J. Ashton, Sec. Lt. R. E. Bolton, Lt. J. M. Brown, Sec. Lt. H. G. Brownell, Sec. Lt. J. W. F. Clake, Sec. Lt. A. B. Corey, Lt. K. J. Oldfield, D.F.C., Sec. Lt. A. M. Perrins, Sec. Lt. S. Playford, Sept. 28th; Sec. Lt. C Davidson, Lt. J. H. Drewry, Sept. 29th; Sec. Lt. A. W. P. Kieser, Oct. 6th; Lt. R. Key, Sec. Lt. T. M. Pratt, Sec. Lt. W. J. Pridgeon, Oct. 9th; Sec. Lt. H. Clayton, Lt A. Murchie, Oct. 20th; Sec. Lt. J. P. C. MacLatchy, Oct. 22nd; Sec. Lt. H. P. N. Gubbins (substituted for notification in "Gazette" of Oct. 24th), Sec. Lt. E. V. Lockyer (substituted for notification in "Gazette," Nov. 4th), Oct. 28th; Sec. Lt. T. Burton, Oct. 29th (substituted for notification in "Gazette," Oct. 28th); Lt. T. F. Campbell, Nov. 2nd; Sec. Lt. K. Shanks, Nov. 6th; Lt. (actg. Capt.) F. I. Lord, D.F.C., Sec. Lt. A. E. Marsh, Nov. 11th; Lt. T. W. L. Burke, Sec. Lt. N. S. Morrison, Sec. Lt. G. E. Scott, Sec. Lt. F. B. Shaw, Capt. W. J. Sussan, Nov. 13th; Lt. S. E. Pitts, Nov. 22nd; Sec. Lt. F. W. Brown, Sec. Lt. A. H. Gooch, Lt. S. Jones, D.F C., Sec. Lt. (Hon Lt.) C. L. Matson, M.C., Nov. 23rd; Capt. I. M. Matheson, Nov 24th; Sec Lt. H. W. Gill, Nov. 25th; Sec. Lt. W. Bailey, Capt. L. F. Hutcheon, A.F.C., Lt. H. A. Pike, Nov. 26th; Lt H. Brooks, Dec. 2nd; Lt. W. W. Jones, Dec. 3rd; Sec. Lt. L. Smith, Dec. 4th; Sec. Lt. S. J. Mason, Capt. F. G. S. Williams, Dec. 5th; Sec. Lt. F. W. Boswell, Maj. F. W. Gamwell, Sec. Lt. R. T. Scott, Dec. 7th; Lt. H. G. D. McF. Payne, Dec 9th; Capt. C. W. Snook, Maj. D E. Stodart, D.S.O., D.F.C., Dec. 13th

Capt. J. Gilmour, D.S.O., M.C. (Lt., Arg. and Suth'd Hrs.), resigns his commn., and is permitted to retain rank of Capt., Dec. 17th.

Lt. B. H. Church relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Dec. 9th.

Lt. W. H. G. Heath (R.A.) relinquishes his commn. on account of ill-health contracted on active service, Dec. 3rd.

Lt. H. Clements-Finnerty (Lt., Lrs.) resigns his commn., Dec. 17th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. D. Fitzimmons, Sept. 28th (substituted for notification in "Gazette," Aug. 19th); E. J. McDougall (contracted on active service), Dec. 4th; F. H. Hall (contracted on active service), Dec. 17th.

The surname of Lt. D. M. Murdoch is as now described, and not D. M. "Murdock," as stated in "Gazette," Oct. 17th.

The notification in "Gazette," Nov. 28th, concerning Maj. R. J. F. Barton, O.B.E., is cancelled (the notification in "Gazette," Nov. 7th, to stand).

ADMINISTRATIVE BRANCH.—Sqdn. Ldr. (actg Group Capt.) W. P. Alexander relinquishes the actg. rank of Group Capt. on ceasing to be empld. as Group Capt., Aug. 1st (substituted for notification in "Gazette," Nov. 18th).

Flight Lts. to be Flight Lts., from (S.O.):—H. H. Clarke, Oct. 15th); E. St. Harnett, O.B.E., Oct. 18th.

The following Lts. are graded for purposes of pay and allowances of Capts. whilst empld. as Capts.:—C. Jeffs, from March 25th to July 31st; J. Pell, M.C., from May 1st to Aug. 21st.

Flying Officer L. D. Baker to be Flying Officer, from (A.), Nov. 27th.

Sec Lts. to be Lts.:—(Hon. Lt.) E. N. Paterson, Nov. 12th, 1918; B. Bear, Dec. 25th, 1918; P. A Staliard (since demobilised), June 6th.

Sec. Lt. (Hon. Capt.) C. J P. Copner to be actg. Lt. whilst empld. as Lt., from K.B., July 29th, 1918.

Lt.-Col. F. H. G. Playfair, C.B.E. (Lt.-Col., T.F. Rse.), relinquishes his commn. on ceasing to be empld., and is granted the rank of Col., Nov. 1st (substituted for notification in "Gazette," Nov. 11th).

The following relinquish their temp. R.A.F. commns. on return to

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AIRCRAFT

Army duty:—Flying Officer R. D. H. Draper (Lt., Yorks. L.I.), Dec. 19th, 1918); Flying Officer W. O. Hatcher (Lt., Scottish Rif.), Nov. 8th; Flight Lt. J. B. E. Crosbee (Lt., Worc. R.), Nov. 28th; Pilot Officer (Hon. Flying Officer) S. Waring (Lt., Leic. R.), Nov. 30th.

Transferred to the unempld. list:—Sec. Lt. H. L. Godfrey, March 17th; Capt. (actg. Maj.) J. Fowler, April 1st; Lt. E. A. Marsland, April 11th; Sec. Lt. D. T. Davies, Aug. 2nd; Sec. Lt. L. H. Meyer, Sept. 23rd; Sec. Lt. P. D. Box, Sec. Lt. G. S. Burns, Sept. 28th; Lt. A. E. T. Robinson, Oct. 11th; Sec. Lt. E. M. Spinney, Nov. 13th; Maj. J. B. Batten, D.S.O., Sec. Lt. (Hon. Lt.) A. Nash, Nov. 20th; Sec. Lt. (Hon. Lt.) D. A. Childs, Capt. W. J. May, Nov. 24th; Lt. H. J. Axten, M.B.E., Dec. 1st; Lt. E. J. Crowe, Lt. J. C. B. P. Seaver, Dec. 4th; Lt. A. E. Marks, Dec. 6th; Capt. W. Fergusson, Dec. 9th.

Lt. T. D. S. Purdey (Lt., Argyll and Suth'd Highrs.) resigns his commn., Dec. 17th.

The surname of Lt. T. M. Goldon is as now described, and not "Golding," as stated in the "Gazette" of April 1st.

The notifications in the "Gazettes" of Dec. 31st, 1918, and May 9th, concerning Sec. Lt. (actg. Lt.) (Hon. Capt.) C. J. P. Copner, are cancelled.

The notification in the "Gazette" of July 22nd concerning Lt. (actg. Capt.) F. J. Wood is cancelled. (The notification in the "Gazette" of July 29th to stand.)

Technical Branch.—Lt. W. Bagnall to be actg. Capt. whilst empld. as Capt., Grade (A.), Nov. 1st, 1918 (substituted for notification in the "Gazette" of Feb. 21st).

Flying Officer F. Murphy, M.B.E., relinquishes the grading for pay and allowances as Flight Lt. on ceasing to be empld. as Flight Lt., Grade (A.), Aug. 19th.

Lt. H. E. Crocker to be Lt., Grade (B.), from (A.), April 17th.

Sec. Lts. to be Lts., Grade (A.):—(Hon. Lt.) J. J. Page, April 2nd, 1918 (substituted for notification in the "Gazette" of July 29th); McL. N. Staight, Dec. 26th, 1918.

Sec. Lt. (Hon. Lt.) W. A. Cockburn to be Lt., Grade (A.), Feb. 6th, without pay and allowances prior to March 24th.

Pilot Officers to be Flying Officers, Grade (A.):—A. E. Davies, Sept. 27th, J. C. W. Fraser, A. Ledgerwood, A. J. Ramsey, V. Rees, Oct. 1st.

Pilot Officer W. O. L. White to be Flying Officer, Grade (B.), Oct. 1st.

Pilot Officer R. A. Silbun to be Flying Officer, without the pay and allowances of that rank, Oct. 1st.

Pilot Officer W. J. Coadwell relinquishes the grading for pay and allowances as Flying Officer on ceasing to be empld. as Flying Officer, Grade (A.), Dec. 1st.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flying Officer H. S. Royffe (Lt., Midd'x R.), Nov. 17th; Sqdn. Ldr. H. F. T. Blowey, O.B.E. (Capt., R.F.A.), Nov. 22nd, Sqdn. Ldr. E. E. Bush (Lt., W. Rid. R.), Dec. 10th.

Transferred to unempld. list:—Sec. Lt. A. L. Flaws, Feb. 15th; Lt. A. Ross, March 17th; Lt. H. B. Low, March 23rd; Lt. F. E. Glass, April 12th; Lt. A. S. Clark, June 21st; Lt. S. J. Hunter, Aug. 10th; Sec. Lt. M. E. Clubine, Aug. 16th, Lt. W. R. Lewis, Aug. 20th; Sec. Lt. (Hon. Lt.) A. N. Pictor (Som. L.I.) (substituted for notification in "Gazette" of Aug. 1st); Lt. W. T. Henry, Oct. 15th (substituted for notification in "Gazette" of Nov. 4th, wherein this officer's rank was shown as Sec. Lt.); Capt. A. C. Day, Oct. 20th; Sec. Lt. H. C. Martin, Nov. 3rd; Lt. J. S. Done, Nov. 7th; Lt. R. Frater, Nov. 10th; Lt. H. B. Brown, Lt. A. A. Gillman, Nov. 13th; Capt. J. D. Clarke, Nov. 22nd; Lt. J. W. Gardner, Sec. Lt. P. H. Matthews, Nov. 25th; Capt. H. K. Kennedy-Skipton, Lt. F. G. Murray, Nov. 27th; Sec. Lt. W. H. Lowther, Dec. 1st; Lt. W. C. Bagnall, Dec. 9th.

Lt. F. M. I. Watts, M.B.E. (Lt., Worc. R.), resigns his commn., and is granted rank of Capt., Dec. 17th.

Sec. Lt. W. L. Rennie (Sec. Lt., Ex. Reg. Empld. List) resigns his commn., Dec. 17th.

The notification in "Gazette" of Nov. 4th concerning Lt. A. E. Burton is cancelled (notification in "Gazette" of Nov. 25th to stand).

The notification in "Gazette" of July 15th concerning Capt. A. P. Thurston is cancelled.

Medical Branch.—Flying Officer J. Prendergast to be Flight Lt., Nov. 22nd.

Wing Comdr. R. H. Mornement, O.B.E. (Surg. Comdr., R.N.), relinquishes his temp. R.A.F. commn. on return to Naval duties, Oct. 30th (substituted for notification in the "Gazette" of Nov. 7th).

Flight Lt. J. D. Bangay (Surg. Lt., R.N.) relinquishes his temp. R.A.F. commn. on return to Naval duties, Dec. 8th.

Flying Officer H. J. Swan relinquishes his temp. R.A.F. commn. on expiration of contract, Dec. 8th.

Transferred to the unempld. list:—Capt. F. C. Morgan, Oct. 25th; Capt. C. L. McDonogh, Nov. 20th; Capt. J. P. Doyle, Nov. 28th; Capt. T. M. Davies, Dec. 7th.

The notification in the "Gazette" of Nov. 21st concerning Capt. L. A. Walker is cancelled.

Dental Branch.—Capt. C. Murray-Shirreff is transferred to the unempld. list, Nov. 26th.

Memoranda.—The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases:—779037 F. W. Brown; 2043071 C. E. Chown (substituted for notification in the "Gazette" of June 13th, wherein this Cadet was described as 316244 E. E. Chown); 120556 W. T. Eberwein.

The following Cadets are granted hon. commns. as Sec. Lts.:—250308 G. Tatham, March 3rd; 137186 S. M. Douthwaite, March 13th; 4650 J. W. Sparrow, April 2nd; 31901 R. B. Oliver, May 5th.

The following Proby. Flight Officers are granted hon. commns. as Sec. Lts.:—M. Jarman, Jan. 23rd; H. Cadman, Jan. 24th; O. Entwistle, Jan. 25th; T. H. Hutchison, Feb. 1st; A. A. Goodale, Feb. 8th; L. C. Letts, Feb. 10th; F. W. Halliwell, R. M. Harvey, Feb. 18th; O. V. Eales, Feb. 20th; R. H. Kimber, Feb. 28th; C. A. Leggatt, March 5th; J. W. Locke, March 8th; G. N. Dawson, March 9th; R. T. Cunningham, G. D. Haggart, March 22nd; W. H. R. Lukey, April 4th; E. Heron, April 10th; G. E. James, April 12th; J. W. Cross, April 17th; H. J. Greenland, May 7th; D. K. Falkner, Aug. 30th; R. Wincup, Sept. 16th.

Lt. C. Q. Steel relinquishes his commn. on ceasing to be empld., and is granted the rank of Maj., May 1st.

Transferred to the unempld. list:—Maj. A. B. Ennis, from (S.O.), Nov. 26th; Lt. D. N. Thomson, M.C., from (S.O.), Dec. 3rd; Lt. J. J. Yates, Dec. 7th.

The notification in the "Gazette" of June 6th concerning Lt. C. Q. Steel is cancelled.

The notification in the "Gazette" of July 29th concerning Capt. C. W. Wise, M.C., is cancelled.

The notification in the "Gazette" of July 1st concerning 184026 Cadet C. E. Jones is cancelled.

The notification in the "Gazette" of Oct. 28th concerning 9438 Cadet T. S. Duncannon is cancelled.

PERSONAL NOTICES.

NAVAL.

Marriage.

ALLSOP—HUBBARD.—On Dec. 4th, at the Chapel Royal of the Savoy, Major John William Kidston Allsop, late R.N.A.S., attd. R.A.F., son of the late T. W. Allsop, Esq., and Mrs. Allsop, of Langland Mansions, Hampstead, was married to Frances, daughter of the late C. W. Hubbard, J.P., and Mrs. Hubbard, of Riversdale, Sleaford, and granddaughter of the late W. Bedford, J.P., of Allan House, Boston, Lincs.

MILITARY.

Marriage.

WILSON—BRIDLE.—On Dec. 18th, at Epsom, Capt. George Ferguson Wilson, late of Seaforth Highlanders, attached to R.A.F., was married by licence to Mrs. Wilhelmina Margaret Bridle, younger daughter of Mr. and Mrs. T. O. L. Becker, of "St. Goar," Barnet Wood Lane, Ashtead, Surrey.

AIR FORCE.

Death.

COCKMAN.—Lieut. Charles Burton Blenheim Cockman, R.A.F., who was accidentally killed at Ramleh, Palestine, on Dec. 10th, was the son of Commander George Wallace Cockman, D.S.C., R.D., R.N.R. He was 22 years of age.

Marriages.

BELLORD—CARDEW.—On Dec. 9th, at St. James's, Spanish Place, Capt. Cuthbert George Bellord, late R.A.F., elder son of Mrs. E. J. Bellord, Hampstead, was married to Margaret Isabel, elder daughter of Sir Alexander Cardew, K.C.S.I., and Lady Cardew, by Monsignor Smith, D.S.O.

GREENWOOD—FAVREAU.—On Nov. 19th, in the Cathedral, Calcutta, Lieut. Eric M. Greenwood, R.A.F., son of Dr. and Mrs. George Greenwood, of Goswell Road and Harrow, late of Enfield, was married to Jeanne Edith, only daughter of the late M. and Mme. George Favreau, of Rochefort-sur-Mer, France, by the Bishop.

Births

DICKINSON.—On Dec. 15th, at "Mairyshade," Gerrard's Cross, to Janet, wife of Capt. C. J. Dickinson, late R.A.F.—a daughter.

GILL.—On Dec. 12th, at 38, Portland Street, Leamington Spa, Daisy, the wife of Lieut.-Col. N. J. Gill, R.A.F., of a daughter.

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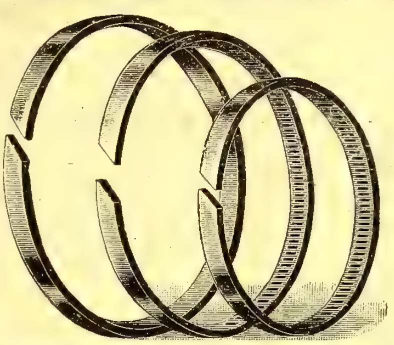

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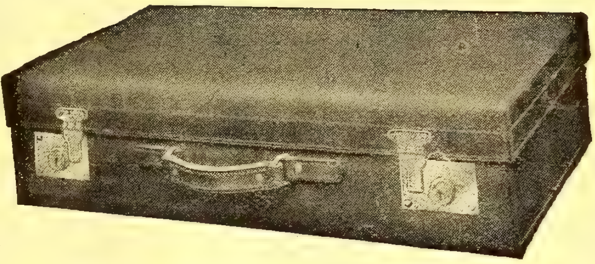

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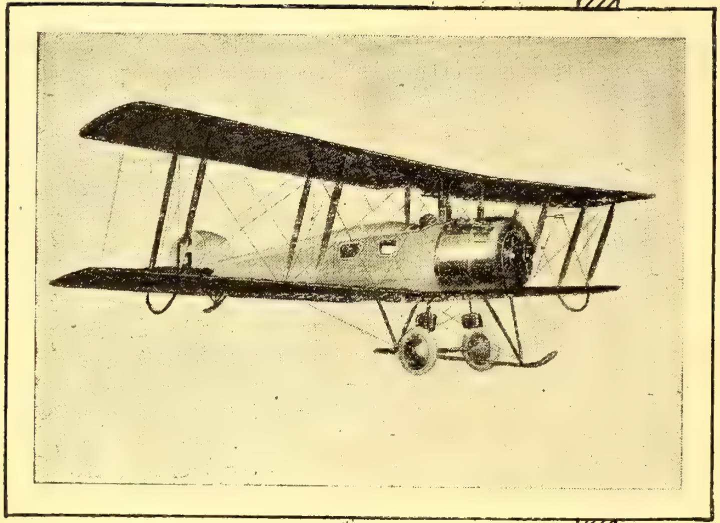

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ON THE PARIS AERO SHOW AND THE FUTURE OF AVIATION.

Indubitably there is a Special Providence which looks after children, drunkards, Englishmen, and other people of obscured intellect. Or else the English are the Chosen People of our epoch. In the days of one's childhood one was always puzzled as to why the Children of Israel were the Chosen People of their day. Their manners and customs as depicted in the Old Testament gave one to think that the choice indicated a lack of taste. Very similarly the English of to-day cause a mild wonder as to why they have been chosen. Yet there is no doubt about their being the elect.

By all the laws of common sense, commercial enterprise and business initiative, we in England should have held an aeronautical exposition late last Autumn—at the close of a highly successful season of pleasure flying and in the full swing of a most promising series of flights between London and Paris, Brussels and Amsterdam. Or we should have arranged to hold one in March next, so that interest could be maintained during the Winter in the designs and trial flights of the aeroplanes and aero-engines of 1920.

Instead of which the Society of British Aircraft Constructors fixed on July of next year as the date for the first British Aero show since the war. And our friends the French led the world, as usual, by organising an impressive and elegant exhibition in Paris at what seemed to be the best possible moment.

A Successful Failure.

As the result of some time spent at the Paris Aero Show one is forced to believe that the Special Providence before mentioned which looks after Englishmen, etc., etc., has again led the Chosen People in the right, albeit the longer path, and that it is an excellently good thing that we did not hold our own aero show earlier than the French show. For, sad to say, there is no doubt that, considered as a business exhibition, the Paris Aero Show is a failure.

Considered as an exposition pure and simple, it has been a great success. The organisation has been of the finest. The arrangement of the stands and of the signs pertaining thereto has been made with that artistic genius which is of the most French. The aeroplanes themselves and the aero-engines are splendid examples of good workmanship and detail design.

But there has been no business doing. The World is not yet ready to buy aeroplanes. The exhibition was premature.

As aeronautical propaganda, as an educative influence, as an indication of the future, the Paris Aero Show has been of very great value. As a means of bringing orders and money to the French Aircraft Industry the Show has been a failure.

It was not surprising to find among one's friends in the French Industry an air of *"Morituri te salutant."* The general feeling seemed to be that this was the last expiring effort of the French Aircraft Constructors, and that if they had to die they would at least die gloriously.

The Disease of the French Industry.

Personally one is far from believing that the French Industry is on the verge of death. One knows the vitality and the recuperative power of *la belle France* too well to think that the Industry in which she led the World from 1909 to 1914 will die a natural or unnatural death in 1920. The nation which survived Charleville and Maubeuge and revived for the battle of the Marne in 1914 cannot let its Aircraft Industry die. Yet undeniably the French Aircraft Constructors are in a bad way, both for lack of business and for lack of genius, or even talent, among their designers.

Judging from what one saw in Paris, the French Aircraft Industry has suffered more from official interference than has the British Industry. There was hardly a French aeroplane in the exhibition which showed originality in general lay-out or in aero-dynamic design. All the machines were good sound examples of very ordinary design and construction. All were good. Few were striking. And none inspired that admiration for originality which one has felt at earlier shows in Paris.

All originality seems to have been crushed out of the French Aircraft Industry either by commercialism——which has prevented the war-profiteers from spending their profits on experimental designs—or by Chalais-Meudon, the French equivalent of what our Royal Aircraft Factory used to be—which refused during the war to sanction or adopt any new design which threatened to be better than its own products or to contradict its own theories.

The great lesson of the Seventh Aeronautical Exposition in Paris is that we in England have much for which to be thankful.

The Brilliant British Exhibits.

Those British firms which had the pluck and energy, and the financial strength, to exhibit their machines in Paris have not only sown seed from which they will reap a rich harvest in time to come. They have in fact conferred a lasting benefit on British Industry in general and on the British Aircraft Industry in particular. Their exhibits were in fact the best things in the whole show, for they displayed originality of idea as well as excellence of workmanship and aero-dynamic design.

The great "W.8" Handley Page, with its striking placard announcing that it had "made the traject" from London to Paris in 1 hour 50 minutes of "real flight" impressed everybody with the neatness of its design and the luxury of its accommodation, and with the power of its Napier engines. It was the *clou* of the show, and a queue of hundreds of people passed continuously across the stand to gaze into the elaborate interior of the saloon.

The Airco stand, displaying elegance of arrangement as a whole, exhibited a beautifully finished "Airco 16" with a Napier engine to the best possible advantage.

The Bristol stand, with its Cosmos-engined "Bullet," its Puma-engined "Tourer," and its Siddeley-engined "Babe" had a business-like appearance which was most impressive, and showed well the cleanness of Captain Barnwell's designs.

The Vickers stand, despite the disaster of the Viking smash, showed by means of models of machines designed by Mr. Pierson, by the passenger compartment of a "Commercial Vimy," and by a number of parts and fittings, the capabilities of the great armament firm.

The Westland Co.'s "Limousine," with its Falcon engine, taught a useful lesson in the art of designing a comparatively small machine expressly for passenger-carrying so that it shall be really efficient, and it indicated the high place of Mr. Bruce among aeroplane designers.

And the all-steel Boulton and Paul biplane displayed Mr. North's originality of idea and sound mechanical knowledge in a way which should be a pattern to future exhibitors. Incidentally, so far as one could see, it was the most advanced example of constructional thought in the whole show.

The Detailed Report.

With such exhibits as these the Society of British Aircraft Constructors was thoroughly well represented. One only wished that there had been more of them, so that the superiority of British aircraft over all competitors could have been more fully demonstrated. The British Industry owes these firms a permanent debt of gratitude for thus worthily upholding the honour of British commercial enterprise and engineering ability.

All these machines, together with their French and Italian competitors, will be illustrated and described in detail in this paper in the first weeks of the New Year, for, owing to the duration and effects of the Christmas holidays this year, it has been a mechanical and physical impossibility to get a full report of the Paris Show into print at an earlier date. One believes that the details of the exhibits will be found both educative and entertaining, and those who wish to read of and see them will do well to make sure beforehand of getting examples of this paper, for in these hard times supplies are limited strictly by the demand.

Polyglot Purchasers.

Given that the French Industry is as indicated hereinbefore, it seems worth while to consider the developments of aviation next year as they appear in the light of present knowledge.

There were foreign representatives in plenty at the Show, but they were not buyers. They were there to see what is being done by the more advanced nations, both in the construction and operation of aeroplanes. They will not buy till they see how our own experiments in running air-lines pay us.

There were Chinese, Japanese, Tonkinese, Javanese, Brazilians, Chileans, Peruvians, Colombians, Argentinos, Norwegians, Swedes, Finns, Poles, Jugo-Slavs, Czecho-Slovaks ("and Stumer Czechs," as a cynical Englishman remarked), Roumanians, Transylvanians, Greeks, Hebrews (quantities), Ephesians, Corinthians (and all the other people to whom St. Paul addressed his circular letters), and, in fact, representatives of every nation, self-determined, undetermined, undermined, or indeterminate, of which Prophet Wilson of the League of Nations ever dreamed in his most dyspeptic nightmare. But they were not buying aeroplanes.

Before they buy they will have to be shown that aeroplanes are reliable, that aeroplanes are safe, and that aeroplanes pay. We have already demonstrated all those things to our own satisfaction in this country. But we shall have to demonstrate them abroad before the buying begins.

When we have satisfactory mail lines running between Rio and Buenos Ayres the whole of South America will begin to buy. When we have flying-boat lines running up the great rivers of China, all China will begin to buy. When we have a Cape to Cairo line running, private enterprise will organise air lines all over South and Central Africa. But not till then.

Prospects for 1920-21.

Between now and next June many of these lines should be running with some regularity. And so, by next July, when the British Aero Show is to be held at Olympia, it is possible or even probable that there may be the beginning of a real market in aeroplanes. If so it will mean a slight revival of activity in aeroplane construction during the winter of 1920-21, and quite a busy year's flying in 1921. After which the Aircraft Industry, now in the deepest depths of the worst possible slump, may begin slowly to climb again towards the peak of a new boom.

For one thing we may, at any rate, be thankful, and that is the fact that we have at last finished with the year 1919, a year to which few will look back with any gratitude or pleasure. It has been a year of disillusionment, of exposed scandals, of disappointment, and (to many) of catastrophe. It has been the year in which befell that which Lieut.-Col. Mervyn O'Gorman, two years or so ago, so wittily and so philosophically called "the cataclysm of a devastating peace." Let us hope that the future holds for us war, if only a war of commerce, for by strenuous effort alone can strength come to us.

Perhaps the wish is father to the thought, but that at any rate is how the situation appears when regarded from here. It will be interesting to see how it works out in practice. Meantime, the British Aircraft Industry is in a very much better position than that of any other country. But that is thanks rather to the goodness of our Special Providence than to any special pro-vidence on our own part.—C. G. G.

* * *

THE UNDER SECRETARY OF STATE FOR AIR.

It is stated officially that Major G. C. Tryon, M.P., has been appointed Under Secretary for Air in succession to Major-General the Right Hon. J. E. B. Seely, C.B., D.S.O., M.P., resigned.

THE PRIX MICHELIN.

Recently, it was stated that M. André Michelin, whose motor tyre manufactory has brought him wealth, had founded a prize of 500,000 francs (normally £20,000) for certain aeronautical performances. The regulations have now been issued by the Aéro Club de France. They are briefly as follows:—The winner is to be the first aviator who (i) flies from a point within 10 kilometres of the Château de Versailles to Reims Cathedral and circling that building returns to the starting point in less than 1 hr. 15 min., having maintained a speed of not less than 200 kilometres an hour (roughly, 124 miles an hour); (ii) and then without landing flies in one hour at a height of 100 metres (375 ft.) a distance of not more than 10 kilometres (6.2 miles) rigorously following a course which is defined as the interior of the perimeter of an equilateral triangle, each side of which is 3 kilometres 600 metres long. This must be done with the aeroplane in its normal flying position. (iii) The landing at the conclusion of these tests must be made in a space of 5 metres (16 ft. 3 in.) from the time any part of the machine touches ground, and without serious damage to the aeroplane. During the landing the normal flying position must be maintained.

These regulations are not lacking in rigour, and though they may initially rejoice the heart of the undertaker, yet aeroplanes capable of winning the prize will be a great advance on any machine in existence to-day.

The prize is strictly reserved to French aviators. French aviators owe a great deal to M. Michelin for his enlightened support of the science which gives them the right to exist.

THE AIR ESTIMATES—(*Continued.*)

[The following is the continuation of Mr. CHURCHILL'S speech of Dec. 14th, the beginning of which was given last week.]

Everything possible has been done to strengthen the Air Ministry and lend body to the Air Force. The Technical Department of the Ministry of Munitions has been transferred from the Ministry of Munitions to the Royal Air Force. The meteorological research has been assigned definitely to the Air Ministry. Civil aviation has been rescued from the ambitions of the Ministry of Transport or the Board of Trade and definitely assigned to the Air Ministry. It will take, approximately, five years to bring the permanent post-war Air Force into the same kind of running order as were the pre-war Army and Navy.

Estimates have, accordingly, been worked out not for one year only, but for five years, subject, of course, to such modifications as may be found desirable.

The Royal Air Force is in want of practically every permanent institution of a disciplined service. Therefore, at the outset schools, colleges, training centres, experimental establishments of many different kinds have to be called into being and organised. My right hon. friend (Mr. Lambert) thinks that because the Navy will not be training for the next two years so many officers as it was before the War there will be a certain number of beds vacant at Dartmouth and Osborne, and he thinks that these extra places in the class rooms and the vacant beds in the dormitories may be made the birthplace, the cradle of this great new Air Force of the future.

I do not think my right hon. friend's suggestion is practicable. The Air Force must have establishments of its own. I do not think you will ever build up a proper Air Force if you are to occupy any spare accommodation which may be found from time to time available in buildings at Dartmouth or elsewhere. We have to have these establishments for the Air Force. The cadets have to be trained to be officers, and the officers have to be trained in the different specialised branches of their profession, and those branches involve the studying of the special needs of the Army, the Navy, and the Independent Service. Officers have, further, to be trained to become air staff officers, to understand not only air warfare as such, but air warfare in combination both with the special and general requirements of the Army and the Navy. Mechanics have to be trained from boys upwards in all the different trades, some highly scientific trades, on whose trustworthiness the Air Service depends for its efficiency and the flying men for their lives. At Cranwell we shall have the Air Force Sandhurst. At Halton there will be the Air Force staff. At Halton also there will be the main training establishments for mechanics and artificers, similar to those which the Navy had before the War on board certain ships. The photographic establishments will be at Farnborough, and the main wireless schools at Flowerdown. The gunnery school will be at Eastchurch. There will also be a navigation school. There will be three store depots and two aircraft repairing depots, one at Kidbrook, and the other at Donnibristle. All these establishments exist at the present time.

During the next three years we have to spend a considerable proportion of our limited funds available for maintaining the Air Force on bricks and mortar. That is to say, we have to replace the temporary buildings which can be used at the present time by permanent structures. Practically no new construction of aircraft is required except for experimental purposes. We shall continue repeatedly to experiment in type, each type an improvement upon the other, but we do not require any bulk production in the next two or three years in aircraft. We have left over from the War an enormous accumulation of stores and aircraft.

The £15,000,000, which is the approximate figure, includes £2,000,000 for research and civil aviation. That amount will be provided for in next year's Estimate. We are allocating £500,000 in the present year, and we have spent £329,000 on civil aviation in the present year.

Out of the £15,000,000 we are providing £2,000,000 for research and civil aviation. Here let me deal with those people who say, "It ought to be the other way round. You ought to provide £13,000,000 for research and civil aviation and the other £2,000,000 should be good enough to manage your military affairs." I must remind hon. Members that we have still an Empire to defend. Odd as it may seem on the morrow of unheard victories, we have all those dependencies and possessions in our hands which existed before the War, and in addition we have large promises of new responsibilities to be placed upon us. The first duty of the Royal Air Force is to garrison the British Empire. Out of the twenty-four and a half fighting squadrons which the Trenchard memorandum contemplates forming at once, no fewer than nineteen are abroad, or will be stationed abroad. Eight will be in India, seven in Egypt, three in Mesopotamia, and one is to be split up between the various naval bases. The maintenance of all these forces permanently abroad, the training of officers and men, the regular circulation of the units on the roster between home and abroad—because we intend to preserve the regimental idea very strongly in regard to the fighting squadrons of the Air Force—all these functions in the Air Force as in the Army will be found to absorb the greater part of the modest sum at our disposal. When to these are added the two fighting squadrons which are all we can maintain at home and the two and a half squadrons which will be working with the Navy, and the one which will be working with the Army—I am supposed to be exceptionally favourable towards the Army as against the Navy; but it will be seen that only one squadron is allocated to the military division as against two and a half allocated to the Navy—the rest of the force will be on independent duty abroad.

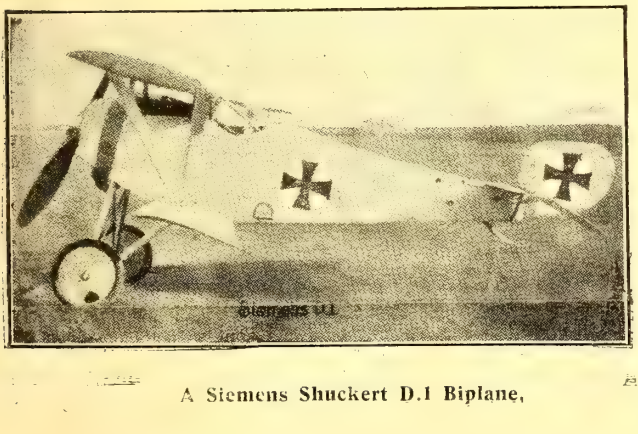
When we have considered all those, and the necessary schools and the training and experimental centres and the general establishment charges, the whole of the available sum is absorbed with the exception of these £2,000,000. Necessity has to come first. The Royal Air Force is now reduced to the very minimum in finance which will enable it to discharge its peace-time military functions, and to have an integral independent life as a permanent Service. If, therefore, larger sums are required for civil aviation, as some are inclined to demand, additional money must be voted by Parliament. That must be faced. I do not myself believe that it is the business of the Government to carry civil aviation forward by means of great expenditure of public money. Our business is first of all to do all we can to facilitate the development of civil aviation, to develop the routes and the key aerodromes, to develop the legislation, to assist in all these ways which are open to a Government Department to advertise and push British civil aviation

We have at the head of civil aviation in General Sykes an extremely competent officer, who is throwing a great deal of personal ability into his task, and I feel with great confidence that his treatment of the problem of civil aviation from the Government point of view will be attended by the same measure of success as has attended Sir Hugh Trenchard's treatment of the military. As to the provision for the Navy very satisfactory relations have been established between the Air staff and the Admiralty. Admiral Beatty in particular has shown that he is a sincere friend and well-wisher of the Royal Air Force. I look forward to the most favourable results from his co-operation.

The Admiralty have not got what they asked for. We simply cannot provide the trained mechanics next year, even if the money allowed, to meet all requirements of the Navy any more than we can meet all the requirements of the Army. What we have to do is to get our system established, our training plans at work, to get our estabments in full activity for preparing the personnel of the new force. The scheme which is outlined by the Chief of the Air staff is the most which is physically practicable within the time and limits available. But I give the general assurance that the Air Ministry will do their utmost to study the special needs of the Navy and meet them in every possible way. Those who seem to think that we are immediately on the verge of some enormous development whereby battleships and surface craft will disappear and will be replaced either by a submarine Navy or an Air Force, or a combination of both, must realise that in proportion as such evolution obtains the support of professional opinion, in that very proportion the large funds which are now spent on the construction of a surface Navy will be liberated and be available for the development of additions to the Air Force.

But the task before us is severely practical; we have to find the necessary air garrisons to defend the British Empire, to create a permanent independent Air Force, to offer young officer airmen or mechanics a decent regular life in a good profession to which it is an honour to belong. This is a task which is self-contained and must be discharged quite apart from any theoretical decision either for revolutionising either the art of war or for the combined organisation of the three Services. It would be a great mistake to delay the practical steps which are needed until an entirely new system of defence organisation has been thrashed out and developed. To make it a unit, to make it in a form where it is not only efficient in itself, but will fit into a higher organisation—that is the practical task on which we are engaged. But if the Air Force is to be independent of the other two Services it must also be interdependent upon them. It must be so organised as to fit naturally and easily in peace or war into a combined organisation of defence. It must be that for its own sake, in the interests of the other Services and in the general interests. Take the case of officers of the Air Force, for instance. Every Service must offer a reasonable advancement to young men who enter it, but a boy entering the Air Force ought to have as good a chance as a boy entering the Army or the Navy of making a career for himself. But as the proportion of general officers during the flying period of their lives in the Air Force necessarily exceeds very largely the proportion of higher posts, therefore we have to turn to the two great Services to assist us, and we have to adopt a system of temporary commissions. About 50 per cent. of the Air Force will be composed of its own officers in permanent commission, 40 per cent. will be the short-service commissioned officers, and 10 per cent. will be birds of passage from the two other Services It may be in future years that it will be still further extended.

It is good for us because it reduces *pro tanto* the pressure of candidates on the limited number of higher appointments. It is good for the other two Services because it familiarises them with the air, and later on it will give them the higher officers who know the true value of the air arm. It is good for all because it tends to promote that solidarity and unity with regard to defence organisation which is more and more demanded by those who are thinking out these problems, and it tends to eradicate the absurdity of mere departmental conceptions of war. Meanwhile the Air Force is dependent upon the Army and Navy for certain proportion of the officers who will be flowing through it. There are certain subsidiary services which the Army and the Air Force can have in common. For instance, we have arranged to have the mapping Department in common. The rations are supplied to the Air Force by the Navy and Army and not purchased direct by the Air Force. The Air Force clothing is bought from the Army Clothing Department at Pimlico. The ordnance is supplied by the Army. The Air Force has its own technical supply, but in these more simple forms of supply there is not the slightest reason why purchasing should not be made through the existing organisation of the Army. The medical service is at present entirely separate. The chaplains' department is separate. It requires careful consideration as to whether it is necessary or proper to continue to duplicate any of these services. All this ground has to be very carefully studied in order—first, to secure the independence of the Air Force; second, not to waste money in duplicating organisation; and, third, not to take any steps inconsistent with the future combinations of the three fighting Services on the basis of common departments for common services. There is no doubt that very large economy and simplification would result from the combined treatment of defence problems, instead of having, for instance, two or three organisations. Instead of having two or three organisations for buying meat and bread, you would have one for all. Instead of three finance and contract branches, you would have one for all. Instead of three medical departments, three sets of hospitals, and three chaplains' departments, there would be one. These are very revolutionary ideas, and progress



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towards them can only be made gradually; but progress towards them must be continued, and nothing must be done in reconstructing the Air Force which in any way conflicts with the final system to which we will certainly be drawn by logic, by economic and by war efficiency, and, in fact, by everything except existing vested interests, namely, a combined general Imperial War Staff for the three Services, actuating and operating under single control.

I hope that the discussions which are now taking place between the professional heads of the three Services, the First Sea Lord, the Chief of the General Staff, and the Chief of the Air Force, may be productive of real advance in this most urgent and important matter.

Here a word as to the position of the professional head of the fighting Services. I consider that in practice the control of the fighting Services is best exercised through the close co-operation of a Cabinet Minister and the professional head, who should be the principal soldier, the principal sailor, and the principal airman of the day in the fighting Service. As long as that arrangement works well everything works well, and when it breaks down the personality should be changed either in one direction or in another. This close co-operation involves almost daily intercourse between the Minister and the professional heads. It is not possible for the Under Secretary to be the channel of all communications passing between the professional head of the Service and the Minister responsible. It has never been so at the War Office or at the Admiralty. The First Lord must deal with the First Sea Lord; the Secretary of State for War must deal with the Chief of the Imperial General Staff; and, similarly, whoever holds the seals of the Air Ministry must deal with the chief of the Air Staff. It is the chief of the Air Staff who is the one to insist on his right of direct access to the Minister responsible, for otherwise everything would have to be taken once to the Under Secretary and then again to the Minister who had to decide.

I have never reproached my right hon. friend. Having held very high offices, as he has done in the past, and having exercised great responsibilities in peace and in war, it was difficult for him to accept frankly the position of an Under Secretary.

The view I take is this: that the initiative in Service matters must in the main come, and as a general rule comes, from the professional head. He plans, he outlines, he proposes. The Minister examines, criticises, suggests, discusses with his Board or Council, and finally approves. It is not possible for the initiative in such matters to come from the Parliamentary Under Secretary, and it would not be fair to the professional head of the Department, nor would it be wise, nor would it work in practice.

Sir DONALD MACLEAN followed Mr. Churchill, and, after the usual protest against the dual Secretaryship, said:—

The Secretary for War has taken great credit to himself and to his Department that this is the only one of the three great Services which has effected a reduction, and he has told us, with great frankness, that the real reduction is to £60,000,000. What will an anxious public think when with a shock it comes to know that the Air Force was to be maintained during the current year at an expenditure of £66,000,000, and to what extent will it be satisfied when this splendid campaign of economy has reduced the total to £60,000,000? We know that the anticipation is that next year there will be an expenditure of £15,000,000 only. To my mind that very remarkable drop, which we hope will appear next year, shows that during this year, at any rate, there must have been gross mismanagement and gross extravagance.

Mr. CHURCHILL: I must apologise for intervening. I meant to give the figures in my speech. Let us take £15,000,000 as representing a normal year. The difference between that and the present expenditure is £39,000,000. Liquidating war contracts and equipment, apart from the Ministry of Munitions, accounts for £12,000,000; liquidating works, £3,000,000; decrease in maintaining war force above the normal amount accounted for £4,000,000; war gratuities accounted for £5,000,000; the pay of abnormal numbers above what will be maintained next year, due to the military situation, accounts for £12,000,000; minor miscellaneous items account for £3,000,000. That gives a total of £39,000,000, all accountable to pure and definite war charges and war necessities, and not in any way attributable to mismanagement.

The reply did not satisfy Sir DONALD MACLEAN, who concluded his speech on a note of plaintive reproach.

On the vote for Quartering, etc., Captain BENN asked if it was not true that a new uniform had been issued to the W.R.A.F. a few days before its final demobilisation. Mr. CHURCHILL said, in reply, that the demobilisation had been carried out more quickly than was expected, hence it was unavoidable that unnecessary kit had been issued.

Technical and Warlike Stores.

On the vote for Technical and Warlike Stores, Captain BENN again began the attack, and after a few words about necessary checks on the use of mechanical transport, suggested in regard to the item of £25,000 devoted to inventions, that personnel in the Services often thought of small improvements, but there was sometimes difficulty in getting these inventions considered. He wished to know whether these ideas could be forwarded direct to an independent person. [That generally means someone who knows nothing of the Service.—Ed.] He also desired to hear about civil aviation.

Mr. CHURCHILL did not think it desirable that officers in full-time Service should receive monetary rewards for any improvement they may invent in the course of their work. Any great or novel invention would receive adequate reward.

[After all, it is the Service which gives the average officer the knowledge and opportunity to make inventions.—Ed.]

Captain BENN intervened to say that he was not asking for monetary rewards, but for the devising of some scheme by which officers' inventions should achieve due decognition.

The SECRETARY OF STATE said he knew of no disposition to snub officers and men who put forward useful ideas.

With regard to mechanical transport, I am satisfied that the reduction of motor-cars now has gone down to the very minimum compatible with the ordinary carrying on of the duties. Some people have the idea that one of the great ways of achieving economy is to reduce motor-cars and to walk instead, or go by train, and others think that if you can get the use of the telephone reduced or shorthand-writers retrenched you will in that case succeed in effecting great economies. If people who are dealing with matters of great consequence write their letters in their own hands instead of dictating them, walk to their business instead of riding, and send a message instead of speaking through the telephone, some people think economies will result, but, as a matter of fact, very few suggestions are less helpful than these.

So far as the mechanical transport of the Air Force is concerned, I have not yet finally reached a conclusion as to what extent we can pool with the Army. . . .

The mechanical transport Repair Department at Shrewsbury, which is under the control of the Royal Air Force, we hope will be wound up and handed over to Slough, which, although it has been frequently abused in this House and out of it by ignorant persons, is increasingly establishing itself as a paying asset in the State and is vindicating in a most conclusive manner the wisdom and foresight of those concerned in its initiation. As far as civil aviation is concerned, I have the figures here. I said the total was £329,000, and these are the principal items: Meteorology, £25,000; pay (salaries), £39,000; air routes, Cairo to the Cape, £50,000; Karachi to Australia, £40,000; purchase of land, etc., £50,000; minor new works, £25,000.

Major-General Sir NEWTON MOORE: Is there any provision for a route beyond Karachi? Is there any provision for acquiring land at either of the stations that would be required between there and Australia?

Mr. CHURCHILL: Oh, yes. This present flight to Australia has been done along a route which the Civil Aviation Department of the Air Ministry has been prospecting and developing. . . .

Only one machine has so far got through, but the trail has been blazed, not only as far as Karachi, but right away through to Australia. I think the best part of the route will be the Cairo, Baghdad, Karachi route, and there, anyhow, you will have large air establishments for fighting or strategic purposes, and it ought to be possible on a first-class route, with aerodromes and so forth, for large commercial craft to make their way. The Cape to Cairo route, on which £50,000 has been spent, is now practically complete, and I could arrange for hon. Members who might be interested to see a roll or a chart as long as from here to the door, showing them all the stations throughout the whole of that route, where there are landing grounds, with dumps, etc. The present state of the scheme is this, that we want an incentive from South Africa as great as was offered by Australia to induce the civil aviation interests in this country to compete in the Cairo to the Cape flight, and I do think the great millionaires of the Rand might well make the offer of a prize equal to that which was given by the Government of Australia, and so offer an incentive to use this route. The route will be kept up by the different local Governments through which it passes. . .

Sir N. MOORE: Where you pass over Dutch territory, for instance, have any arrangements been made with the Dutch Government? . . .

Mr. CHURCHILL: I can only say that it is for the Controller-General of Civil Aviation to do his best to smooth away the difficulties. . . .

Works, Buildings, and Lands, and Air Ministry

In the discussion on the Works, Buildings, and Lands Vote and Air Ministry Vote, questions were asked by Captain Benn and Lieut.-Commander Kenworthy, none of which were of either general or aeronautical interest.

Miscellaneous Effective Services.

Captain BENN, who this day was filled with the inquisitiveness that endears children to their relatives, asked whether the Meteorological Office was completely under the Air Ministry. He thought it should be, as aviators must know more about the atmosphere than other people. They should, he thought, supply information to the other Services.

Mr. CHURCHILL: The intention is that the meteorological staff and all investigations into that branch shall be brought, in practice, under the Air Ministry. It is said that the eye of the master maketh the horse fat. No one has an interest in meteorology comparable to the Air Ministry. . . . It is following a perfectly logical and defensible principle to confide the charge of that matter entirely to us.

Lieut.-Colonel MOORE-BRABAZON asked why the charge for Meteorology appeared under civil aviation, and was told that "civil aviation this year has not been able to spend the modest sum allotted to it." If money ran short the charge would be transferred to the military side proportionately to the service rendered.

The Second Day.

The Report Stage was taken by the whole House on Dec. 15th, and the resolutions passed at the first sitting were read a second time.

On the first resolution—as to pay of the Royal Air Force—Mr. HOGGE, whose permanent worry in life is the pensions and gratuities of "other ranks" in the Services, said that though the allotment of Service gratuities on discharge amounted in the case of officers to £3,000,000 that for other ranks was only £2,100,000. He said that he understood that there was a larger proportion of men to officers in the Royal Air Force than in the Regular Army. [Here he is entirely wrong.—Ed.] He knew that the basis of officers' gratuities was 124 days' pay for the first year of service and 62 days' pay for every successive year or part of a year. He thought that "other ranks" should receive gratuities on the same basis.

The SECRETARY OF STATE said that the Government had no intention of altering the present system. About £5,000,000 had already been paid to officers demobilised from the Royal Air Force. In reference to the comparative numbers, he said that "in the Army the proportion of officers to men was nothing like so high as in the Air Force. There were nearly 25,000 officers in the Air Force at the conclusion of hostilities. I do not think the number of men exceeded 200,000."

On Captain BENN asking if the Government would state their policy as to the making of more non-commissioned pilots as is the custom abroad, and the use of officers as observers, Mr. CHURCHILL said that he could not intervene, as the House was not in Committee.

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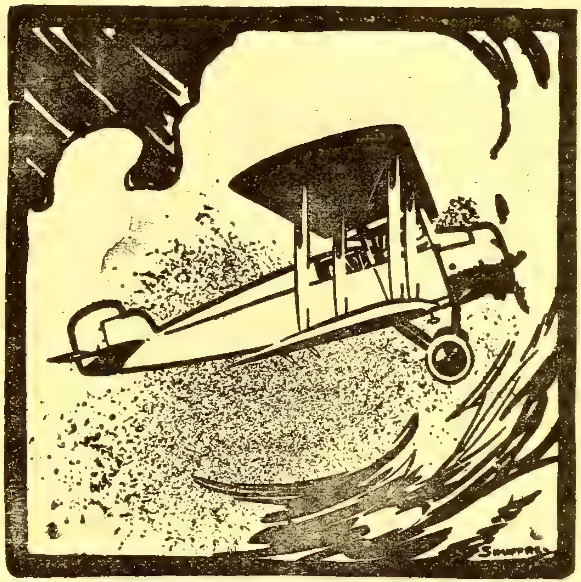

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At this point the Irish members began to take a part. As a result of their dissatisfaction at the suppression of the "Freeman's Journal" they endeavoured by means of the time-honoured "talking out" method to delay the proceedings of the House in order to prevent the Irish Education Bill being taken during the day. Hence, it is not one's intention to deal at any length with the Irish speeches save where they accidentally touch on matters of importance to aviation.

After a series of speeches by Mr. KELLY, Mr. DEVLIN, and Captain REDMOND, the questions in which were mostly disallowed by the Speaker, Mr. CHURCHILL, with some courtesy, gave a general reply, in the course of which he said that the W.R.A.F. had been reduced to 200.

On division the House agreed to the resolution.

Supplies and Transport.

The Second Resolution was then read a second time. Mr. KELLY again spoke. He argued that scavenging, sanitary services, etc., should be done by R.A.F. personnel as punishment fatigues in order to save public money passed in payments for civilian labour. He also thought the large clothing charge was due in great part to the frequent changes in uniform made in the past 18 months.

Capt. BENN wished to raise the question of the Medical Services. The medical conditions in the Air Force were essentially different from those prevailing in other services. The French and Italians had done much good work in this direction, and at Padua a large laboratory had been opened for the purpose of instituting accurate tests in respect of people applying for commissions in the aerial arm. He wanted to know if Col. Flack's work was being encouraged.

Mr. HOGGE spoke of houses and clothing, and Mr. DEVLIN was interested in the £1,000 set aside for the purchase and upkeep of horses. Captain REDMOND also showed interest in all these subjects, and in addition wished to know

> what is meant in regard to the medical services referred to and the hospital charges in respect to the Army and civil hospitals of £150,000? Has the right hon. gentleman created any new hospitals? Where are these hospitals? Are they in Edinburgh, London, Dublin? All that we are told in this White Paper in relation to the medical services is Item No. 2 Hospital: charges in respect of Army and civil hospitals, £150,000. Is the right hon. gentleman subsidising existing hospitals?

To all of which Mr. CHURCHILL replied.

> The £1,000 alluded to here is for horses required in respect of the area commands. There used to be eight area commands of the Flying Force in the United Kingdom in which horses were provided for the officers who had a war staff We have reduced these areas to two—the inland and the sea-board area. The officers have a pretty wide district to cover. They are often equivalent in rank to a general officer and in respect to the duties they have to discharge, and they have to get over a good deal of ground. Horses have been purchased, not mules or asses.
>
> Mr. DEVLIN: The asses are all at the War Office?
>
> Mr. CHURCHILL: I am not quite sure whether the field over which the asses roam is not wider than that. Observations like that carry one back to one's early school-days, when jokes of that kind about the possession of asinine qualities by particular individuals were expected to pass muster. So far as the medical services are concerned, the £150,000 is required to pay the hospitals on account of the disbursements to which they had been put. An airman ill or injured, where there is no other hospital, is taken to the nearest civilian hospital, and, of course, the bill comes in to us in due course.
>
> Captain REDMOND: They are existing hospitals?
>
> Mr. CHURCHILL: We are not building any new hospitals On the contrary, the process this year has been the closing of hospitals on an enormous scale. Then about the clothing. The hon. gentleman was surprised that £45,000 should be spent on clothing for the Women's Royal Air Force. Attention has already been drawn to the fact that this average for 9,000 women only works out at £5 per head, and that does not seem to me to be excessive for the requirements of a considerable number of females.
>
> Mr. KELLY: Is it not £9 a head?
>
> Mr. CHURCHILL: I am not strong at arithmetic, but I think that, as a matter of fact, five nines are 45.
>
> Mr. KELLY: I beg the right hon. gentleman's pardon, I am wrong.
>
> Mr. CHURCHILL: Then a word as to the clothing of the men of the Royal Air Force. In the middle of the war when the Air Force was formed into a separate unit a new uniform of khaki was adopted. Now that the war is over, it has been decided to make another change. It has been thought desirable to have a more modest and a more sober-hued cloth. It shows, however, the distinctive character of its design. This involves no additional expense, because we make the strictest rule that every officer has to wear out his old clothing, even the original khaki, before he adopts the new pattern. It is quite easy for the Air Force to do that, because they can keep their old uniform for the dirty oily work which has to be done in regard to aeroplanes.

In regard to the medical examination of pilots he said:

> I have no reason to believe that the apparatus we have for this purpose in the Royal Air Force is in any way inferior to any apparatus in use in any other Air Force in the world. I can quite see that the medical service of the Royal Air Force, even if it should not be separated from the general medical service, must be a highly specialised branch, because the conditions require special aptitude, and we are all acquainted with the effect which flying produces on officers and men, and this makes it necessary that the medical service dealing with them should have had a specialised study of those conditions. Therefore I fully recognise that it must be a special branch of the medical service. . . .

The resolution was agreed to by the House.

Technical and Warlike Stores.

The third resolution was then read a second time.

Lieut.-Com. KENWORTHY was interested in the £25,000 set aside as rewards for inventions. He wished to know whether or not due attention was being paid to the helicopter. The French had done much in this way but he feared that "certain sections in the Air Ministry were lukewarm" in the matter.

[What, for instance, has the Personnel branch to do with helicopters?—Ed.]

In regard to kite balloons, he said:

> I noticed in the "Times," under the title of "Naval News," an item to the effect that sloops proceeding to the China station were having their kite balloon winches removed and the old appliances replaced. That appears to me to evidence a very short-sighted policy. Every ship sent to China should be equipped with the latest anti-submarine devices, and certainly with the kite balloon.

Mr. HOGGE, among other points which were not clear to him, wished to know if the £25,000 for inventions was to be spent as awards to aviators or was to make provision within the Air Service for the testing of inventions submitted. If the latter arrangement was intended the sum seemed inadequate.

Capt. REDMOND, with much circumlocution that the business of the House might proceed slowly, asked if the £144,000 asked for was to cover the price of one airship only, and what was being done with the material purchased for other airships and deprecated the waste of the time and money expended on them. He was worried about the expenditure on the construction of aerodromes in Ireland at Tallaght and elsewhere. Why did they lay out aerodromes only to abandon them at a later date?

[Capt. REDMOND should not forget that a state of war existed between this country and certain foreign Powers from 1914 to 1919.—Ed.]

Mr. KELLY also spoke with charm on nothing for fifteen minutes.

> Mr. CHURCHILL: As to the £25,000 for inventions, that admittedly is a small sum, but, in the first place, the Inventions and Research Department has only really begun to develop its station during the last few months. It is probable that more expense will be incurred on that account in later years. Also there are several important claims for inventions made during the war which are still *sub judice* and which are likely to mature, not in the current year but in the currency of the next financial year. I made a mistake a few minutes ago in saying that the Appropriations-in-Aid on Vote 1 of £450,000 was in respect of the airship. Of course, it had nothing to do with that at all. In the item "Appropriations-in-Aid, £545,000" on this Vote is contained money received on account of the airship that has been sold. We are endeavouring to dispose of all the airships, with the exception of three, which are reserved for certain purposes. We hope to sell them to a company which will take them over under certain conditions. The Government will participate in any advantages which are gained from their use. . . . .
>
> I was then asked about the helicopter. There is no doubt at all that if civil aviation is to achieve really wide development, it must be through the agency of some quite different kind of aeroplane from that which is used at present. The great speed involved in landing aeroplanes at present, and the length of ground which they require to pull up in, will always invest with an element of peculiar danger that form of travelling. If this invention were successful, it would undoubtedly give us a machine which, if the engines stopped, would descend like a parachute, quietly and gently, and sit down on the ground without anyone being hurt. It would also give us a machine which would rise practically straight from anyone's back garden, and the extraordinary fact is revealed by investigation that it is by no means impossible, scientifically and theoretically, that the helicopter machine would not only rise and descend perpendicularly, but when it progressed laterally it would be capable under certain conditions of developing very great speed. It is true that the inventor, Mr. Brennan, who has been studying this for a very long time—I started him on it when I was at the Ministry of Munitions—does not make the claim in regard to great lateral speed, but some scientists who have worked it out theoretically think it is by no means impossible. However, progress has been disappointingly slow, and indeed we have not yet succeeded in making a machine which will ascend into the air, and the whole field is extremely speculative; but it is certainly a matter of very great interest, which should be pursued with the greatest energy by all who are interested in the future of civil aviation. . . .

The Resolution was agreed to by the House.

Works, Buildings, and Lands.

The fourth resolution on Works, Buildings, etc., was read a second time.

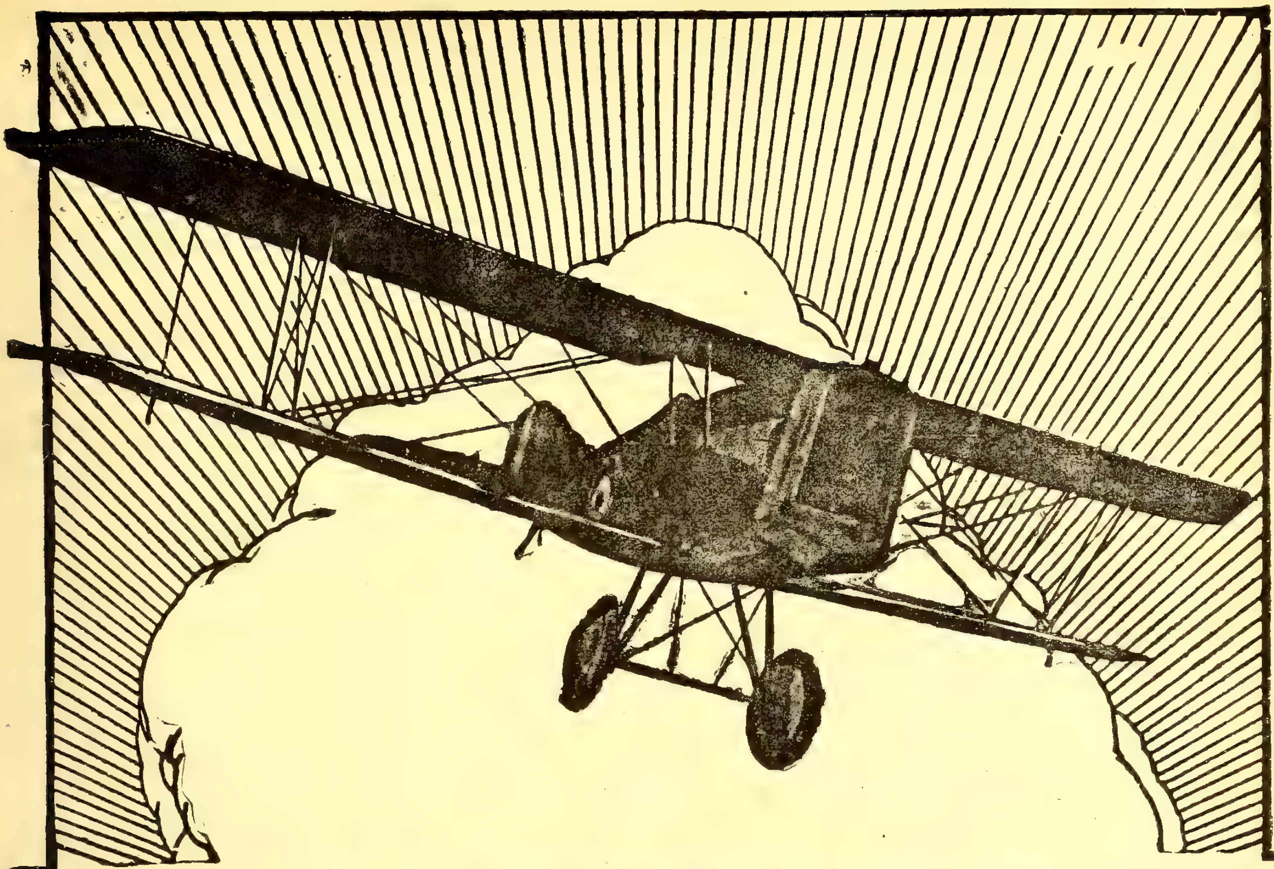
Major BARNES raised the whole question of the attempt to sell Lord Rosebery's land at Turnhouse Farm without consulting him in the matter. He said it was illegal even under D.O.R.A.

Mr. CHURCHILL, replying, said that the matter had been thoroughly thrashed out in the public Press. He held that the Government proceeded within the existing limits of the laws of the land. He proposed to let matters take their course. Tribunals already existed to protect the community from abuse and individuals from injustice.

This reply roused Mr. DEVLIN to make a long speech delivered with perfect elocution, protesting against the scandalous treatment of Lord Rosebery.

Mr. KELLY, tired of listening to others, and mindful of the necessity of obstruction, spoke again on works and buildings, and asked if Sub-head H, showing the incidental expenses of the "Air Ministry Estates," included estates in Ireland held by that department.

> In Ireland some very fine land in and around Dublin belongs to the



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Air Ministry, and a very valuable crop of meadow has been taken off it. I would like the right hon. gentleman to tell me if these lands are let or if they are used directly by the Air Ministry, and if any credits come to the Department from the use of them.

In the course of a further speech Mr. HOGGE said :

I want to ask something about paragraph (B). We sometimes find embedded in these Estimates a rather distinct Empire fact. The phrase used in paragraph (B) is "accommodation at stations on aerial route between Egypt and India, £50,000." What is that aerial route? Is it a route over British territory, or territory over which we have some protection? For what is it designed? Is it an Imperial venture, or has it anything to do with the situation of Egypt and India from the point of view of possible disturbances in either of those countries or in both at the same time? I suppose that the route must have been mapped out. Is it part and parcel of another route?

Mr. CHURCHILL: The hon. Member spoke first of the aerial route from Cairo to India. This £50,000, which is taken in the Vote this year, is only the beginning of the preparation for the aerodromes and accommodation which will be required at Cairo, at Baghdad, and at Karachi, the three main points on the route from Cairo to India. This is the most important section of the route from London to Australia, and it will come into existence as a going concern long before the other parts of the route are perfected. In the first place, it is in clear fine weather, where there are no clouds or disturbances such as affect flying enterprises in these islands. You are able to fly all the year round along that route, and long journeys will be or ought to be made with great certainty and safety there. In the second place, Cairo, Karachi, and Baghdad are all places where we have our garrisons of air force in any case for military purposes, because we expect to hold this Middle East theatre very largely through the instrumentality of the air. They will be a substitute for large bodies of troops, and will supplement the troops which are holding these regions. Therefore, there will be three great air stations at these three centres. There will be, probably, eight or nine squadrons distributed among them. They have to be there in any case as part of our general strategic arrangement. It will be very convenient to let mail flying, passenger flying, and civil flying take place over this route, because we shall have to keep the stations there anyhow. It will mean that you will not have to saddle the mail contract with the burden of all the aerodromes and hangars and the regular plant, because those will be there for military purposes. Of all the places where you can bring civil aviation into effective commercial use this section between Cairo and India is the best It has also the effect of buckling the Empire together in a very remarkable manner, because by the saving of time it ought to be possible to fly in two days, or in three days at the outside, from Cairo to Karachi, and that saves a large part of the eleven or twelve days which would be spent at sea.

With regard to Halton Boys' Training College, I can report that the buildings and estate now belong to the State. They were taken over in the war, but were so much knocked about, both the house and the estate generally, that it was a better investment for the Crown to purchase than to pay money to the owner. We made a good bargain in the interest of the State, and it is now one of the most valuable properties in the possession of the Air Force. We not only propose to put our staff into the house, but we propose to put in the grounds the principal training college for young air mechanics. It is all part of the full scheme which was embodied in the Trenchard Memorandum. Nearly all the mechanics in the Royal Air Force want to go; at any rate, the overwhelming majority want to go, and we should not be able to put any aeroplanes into the air unless we set to work at once with the training of new and trustworthy mechanics. That, of course, takes time. For many months we have had between 3,000 and 4,000 boys in training. It is an imposing sight to see those enormous long walls with their hundreds of lathes, at which the boys are being taught professions which will be of the very greatest utility to them, apart from the Air Force, in their after-life. When you have these boys being trained there it is essential that the conditions should be suitable and provide for their health. At present the buildings are falling to pieces. We are going to replace the huts by a regular system of brick buildings, making the place a great and permanent centre of Air Force training. The sanitary arrangements also are being considered. There will be a gymnasium and a recreation room, and, I think, a cinema. At any rate, there will be all the regular institutions of a small, modern, educational community. With regard to the Appropriations-in-Aid, the principal payment has been made by the United States. Hon. Members will perhaps remember that in the last year of the war we undertook to assemble for the United States an enormous number of aeroplanes that they were not able to assemble themselves. The aeroplanes were brought over to this country in parts, and we fitted them together. Aerodromes were fitted up at considerable expense for this particular work. They have been able to repay us the charge agreed upon, and we have not had to wait, as we have had to do in regard to repayments by all other countries.

The Resolution was agreed to by the House.

On the remaining Resolutions which were finally agreed to Mr. KELLY alone spoke. Nobody intervened and nobody replied.

And so the Air Estimates debate concluded.

THE KING'S SPEECH.

In the course of the King's Speech proroguing the Houses of Parliament on Dec. 23rd, the following passage occurred :

"Great progress has been made during the past year in the gigantic task of demobilising My Navy, Army, and Air Force, impeded as it has been by the uncertainties of the situation in large parts of Europe and Asia."

THE FRENCH CIVIL AVIATION BUDGET FOR 1920.

Civil Aviation in France is governed by the Office de Coordination Générale de l'Aéronautique over which General Duval presides. Grouped under this office are the three different aeronautical sections, the S.N.Aé. (Service de la Navigation Aérienne), the S.T.Aé. (Section Technique de l'Aéronautique), and the S.F.A. (Service des Fabrications Aériennes).

This office has prepared its Budget for 1920, and proposes to ask the Chambers for supplies to the amount of 233,393,000 francs (normally, £9,335,720). This money, if granted, will be allocated as follows :—

	Pay. fr.	Operation of Services. fr.	Construction of Materiel. fr.	Transport of Materiel. fr.	Special Wartime Indemnity. fr.
S.N.Aé.	5,743,920	23,549,603	Aeronautical, 63,350,000 Aviation, 62,470,000 Research, 3,766,000	1,000,800	75,000
S.T.Aé.	890,000	46,155,000	Construction, 4,830,000 Competitions, 16,000,000		
S.F.A.	1,706,700	2,000,000	350,000		

To which should be added a sum of 25,000 fr. allocated in general to the three sections for "charges de famille," whatever that may mean.

The 63,000,000 fr. allotted to the S.N.Aé. for aeronautical construction is to be devoted to the construction of four dirigibles, and to their operation in civil work. 20,000,000 fr. of the vote for S.N.Aé. will go to aerial navigation companies in the form of premiums and subsidies.

THE FUNERAL OF SIR JOHN ALCOCK.

The funeral of Sir John Alcock, K.B.E., D.S.C., took place on Dec. 27th at Manchester, Major-Gen. Swinton, C.B., D.S.O., representing the Royal Air Force, and Squadron Leader E. R. Moon, D.S.O., representing the Secretary of State for War, were present.

H.M. the King and Capt. H.R.H. the Prince Albert, K.C., R.A.F., have sent messages of sympathy to Mr. and Mrs. Alcock. The King's message, forwarded by Lieut.-Colonel Clive Wigram, is as follows :—

"The King desires me to express his deep sympathy with you in the untimely and tragic death of your distinguished son, whose name will ever occupy an honoured place in the roll of British airmen who never spared themselves in order to uphold the honour of their country. It was with pleasure His Majesty recently decorated your son for his great feat in crossing the Atlantic, and the King feels that the early close in the prime of manhood of so valuable a life is an irreparable loss."

The message from Prince Albert, forwarded by Wing Cmdr. Louis Creig, R.A.F., reads :—"I am desired by His Royal Highness Prince Albert to express to you his deep and sincere sympathy for the loss of your gallant son. Your son's services to his country, both in war and peace, will ever be remembered."

THE NEW SECRETARY OF THE R.Ae.S.

Owing to the resignation of Mr. W. Barnard Faraday, LL.B., who has filled the office of Secretary to the Royal Aeronautical Society with such marked success during the past four years, it has been necessary to find a new secretary. The choice of the Council has fallen on Lieut.-Col. W. Lockwood Marsh, late R.A.F.

Colonel Marsh has during the war been concerned with airships, and has made a name for himself as an authority on these craft. It seems well, thus, that the Secretary of the R.Ae.S. should have a personal interest in airship work, as this will prevent him from devoting himself to the heavier-than-air side of aeronautics to the prejudice of lighter-than-air.

Mr. Faraday's departure will be deeply regretted, for his affability and good humour have endeared him to all who have had dealings with the R.Ae.S. The recently-published Glossary of Aeronautical Terms issued by the R.Ae.S. as the result of the work of the Technical Terms Committee will remain as a monument to Mr. Faraday's industry and assiduity during his term of office. All will wish him well in his new work, and all likewise will wish Colonel Marsh success as Secretary of the oldest society in the world concerned with aeronautics.—C. G. G.

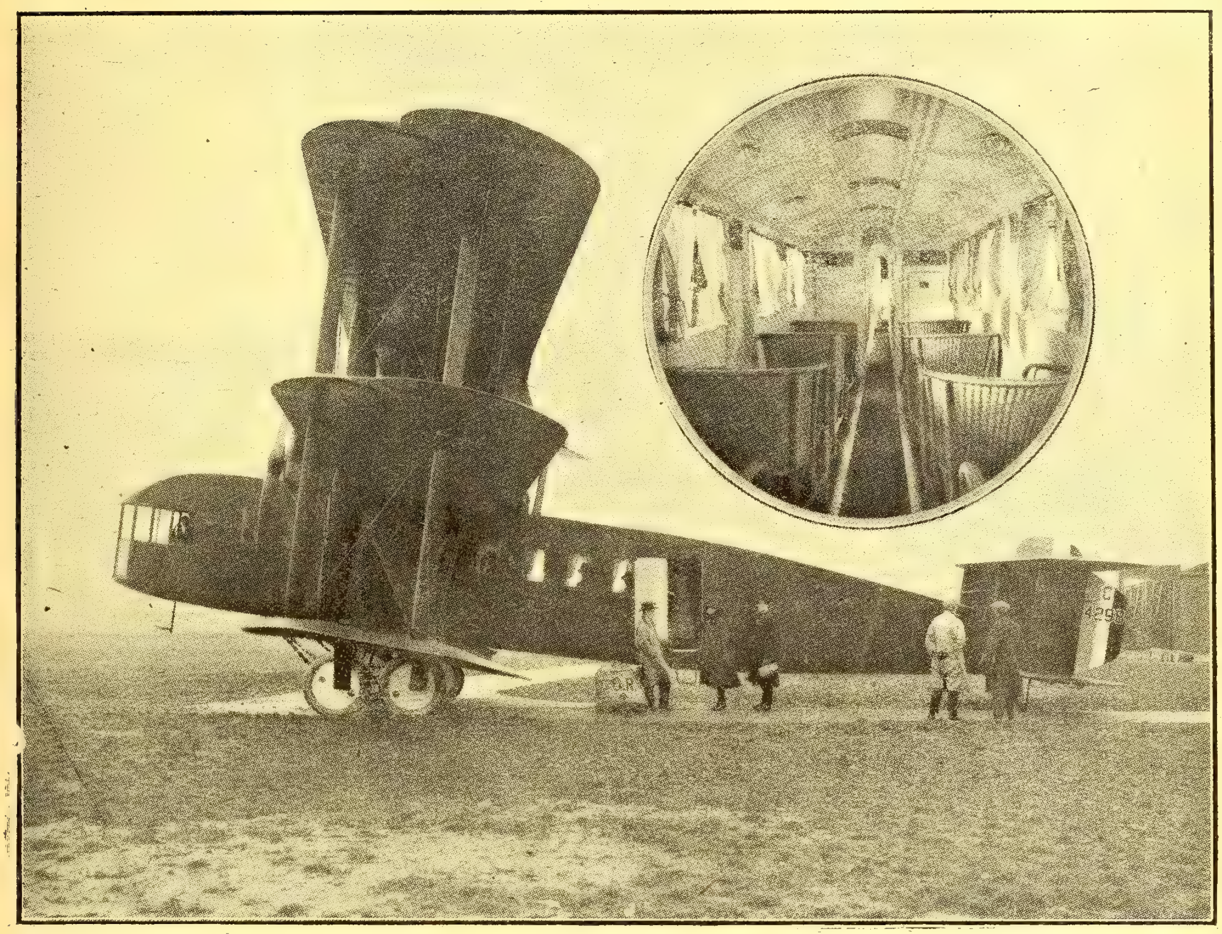
THE ROYAL AERONAUTICAL SOCIETY.

A juvenile lecture to the children of members and friends of the Royal Aeronautical Society, entitled "How Airmen Find Their Way," will be delivered on Thursday, Jan. 8th, 1920, at 3 p.m., at the Royal Society of Arts, by Major H. L. Wimperis, R.A.F. Tickets may be obtained from the Secretary, R.Ae.S., 7, Albemarle Street.

THE AEROPLANE'S PARIS AERO-SHOW REPORTS.

The Reports on the Exhibits at the Paris Aero Show will be published next week and the following week in the "Aeronautical Engineering" Supplement to this paper. The machines will be described and criticised by Captain W. H. Sayers (late Technical Dept., R.A.F.) and Mr. C. G. Grey. Every machine shown will be illustrated by sketches drawn on the spot by Mr. Leonard Bridgman (late Technical Officer, R.A.F.). These reports will be found to be the most complete and illuminative published in any paper. The number of copies available is limited, and those who wish to obtain copies should order them at once from "The Aeroplane" Publishing Department, 61, Carey St., London, W.C.2.

The "Bristol" Aeroplanes



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THE DEATH OF CAPTAIN SIR JOHN ALCOCK, K.B.E., D.S.C.

The death of Sir John Alcock is a severe blow to British Aviation, in that he was naturally much in the public eye, but still more is it a blow to his old friends among those concerned with flying, for his sterling worth, his modesty, and his good heart endeared him to all who knew him. It is the irony of fate that one who had gone through all the perils of the early days of flying, who had made long raids over the worst of enemy country, and who had crossed the Atlantic on a land-going aeroplane, should die in a simple accident.

As to the nature of the accident there can be but little doubt. One who investigated the cause closely the day after the occurrence gives the following particulars :—

As may be seen from the sketch, the machine—which was a Vickers "Viking" amphibian flying-boat, with retractable landing-wheels and a Rolls-Royce engine—struck the ground 80 yards away from a wire fence over which it had passed. The occupants of the farm, shown in the sketch, heard an aeroplane approaching through the mist, which was scarcely a fog. The machine circled round the field, judging by the sound, though it was only seen for a moment.

At the end of the circuit it came round over the farm quite low down and carried away the top branch of a tree. This branch was quite small and would not appear to have been strong enough to affect the progress of such a machine as that on which Sir John was flying. The machine disappeared in the mist, and a few seconds afterwards a crash was heard.

The farm people went over the fence into the field and found the machine standing on its nose. The pilot was still in his seat, with his hands gripping the spade-handles on each side of the control column. Every control was intact and operated freely after the smash.

The surgical examination showed that no bones were broken except his jaw. He had pitched forward into his wind-screen, and the blow on the point of the jaw had jerked his head back and had fractured the base of the skull. Men have been killed in boxing matches by blows on the point of the jaw producing precisely such an effect.

From this it is evident that the force of impact was small, so it is clear that the actual fall can only have been a matter of a few feet. The landing-wheels were down in position to land, but there was no mud or grass on them to show that they had ever touched the ground. Also, the only parts of the machine which hit the ground were the nose of the boat, which was crumpled back, the leading edges of both lower planes, and the noses of both wing-tip floats.

Hence, the only possible assumption is that the machine struck nose-on from a height of a few feet. The only possible deduction, therefore, is that she stalled when very low down.

It would be difficult to imagine so skilled and experienced a pilot as Jack Alcock stalling his machine when landing if one did not perceive the probable cause of his doing so. It will be noticed that it is 90 yards from the line of trees to the wire fence. As the machine actually hit the top of one tree the assumption is that he was gliding down to land and deliberately scraped low over the trees to do so.

In such a case he would be only 30 feet or thereabouts above the ground when crossing the line of trees. As he would be gliding as slowly as possible his angle of descent against the wind would probably be about 1 in 6 or 1 in 7. Thus, in 60 or 70 yards he would be within a few feet of the ground.

It may be assumed that he then saw the wire fence 15 or 20 yards in front of him, and made an effort to lift the machine over it. Whether he opened out his engine to get the necessary litf or not does not seem to matter much. Though the farm people say that they heard the engine running till they heard the crash one cannot rely on this evidence, for their unaccustomed ears may have deceived them.

In either case it seems clear that in trying to lift the machine over the fence it shot up a few feet into the air, carried on for another 40 or 50 yards and then stalled and dived onto its nose.

There is just a possibility that on seeing the fence he opened his engine intending to fly another circuit and land the other side of the fence. In this case he may have stalled with his engine full on, in which case one thinks the crash would have been worse than it was in fact. Or the engine may have choked or faltered at the critical moment and have left him in a stalled position. Or he may have flown over the fence intending to land beyond it, where, owing to the rather sudden fall of the ground towards the corner of the field, and the position of his wind-screen, together or separately, causing him momentarily to lose his horizon, he may have flown straight into the ground at the point indicated. In this case, it is hardly likely that the machine would have struck direct on its nose.

It would seem, therefore, in any case, that the direct cause of the accident was a praiseworthy but wholly lamentable attempt on the part of the pilot to save his machine from injury. If he had landed and run into the fence, or if he had landed on top of it, the big strong boat-hull would simply have swept the fence away, and even if there had been a ditch alongside the fence the keel of the boat would have slid across it. But, no doubt, he was anxious to save the machine from even scratches and tears, in view of the fact that it was to have been exhibited at the Paris Show after alighting on the Seine near the Grand Palais.

His reason for landing was that the mist was so thick at that point that one could only see 50 or 100 yards ahead, and might well have been thicker farther inland. As a matter of fact there was hardly any mist east of Rouen, and near Paris the weather was clear and sunny, with occasional showers. All of which shows how large a part pure luck plays in the fate of man.

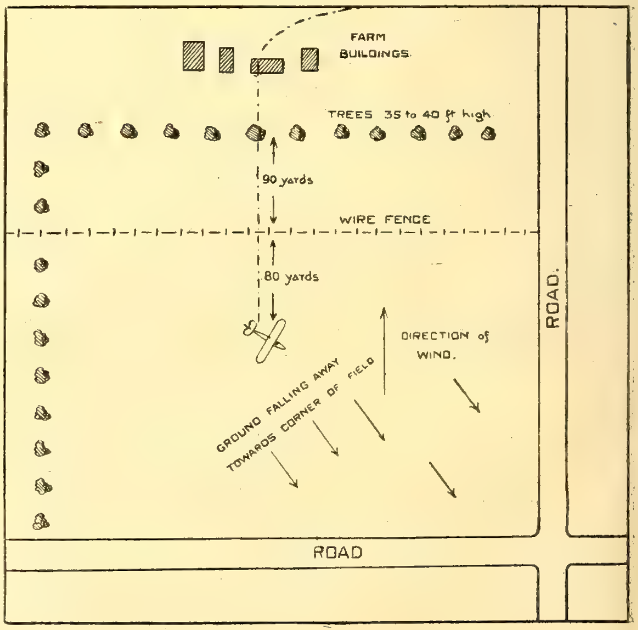
Whether the foregoing be the true explanation of the accident or not the points suggested therein are worthy of consideration by all pilots. The great lesson to be learned from this, as from the deaths of so many other experienced pilots, is that when anything unforeseen occurs a pilot should never attempt to save his machine if he sees that he can alight safely at the expense of a little damage to the aeroplane.

Those of us who knew Jack Alcock, the quiet, unassuming but earnest and confident aviator-mechanic at Brooklands, who later met him as a Warrant Officer pilot, R.N.A.S., who saw him again as a commissioned officer with a D.S.C., and, again, as the hero of the great trans-Atlantic flight, have known him always as one of the salt of the earth. Those under whom he worked and those who worked under him alike esteemed his solid worth and his sound common sense.

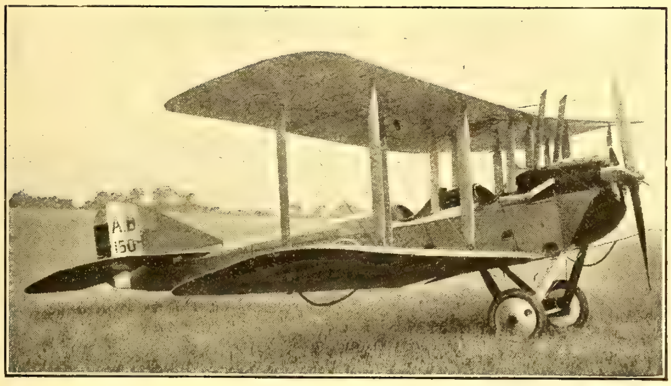
He loved flying for flying's sake. He was ambitious to do something big for the sake of flying rather than for any monetary reward it would bring. One remembers a certain letter which he wrote from his prison camp in Turkey telling one that he was well and fit, and adding that after the war he would be ready for "any big stunt." He had his wish. He achieved the biggest "stunt" of all, the direct flight across the Atlantic.

Now he has had the "very great adventure." At the end of it he has found many old friends in that Valhalla where dead aviators meet. But he has met no enemies, nor has he left any enemies behind him, for Jack Alcock had none.

C. G. G.



ALLIANCE TYPE P1.



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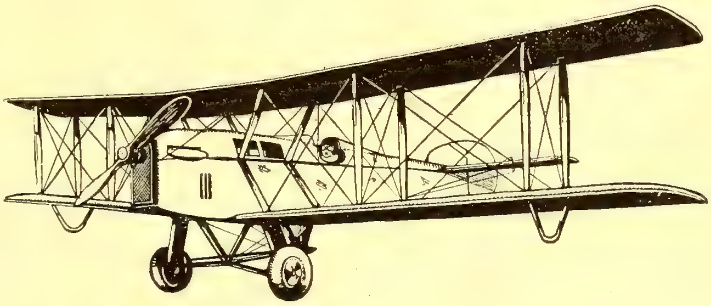

It has a top speed of 107 M.P.H. and a landing speed of 40 M.P.H., which, combined with a wide tracked oleo undercarriage, renders it capable of being landed almost anywhere. The wings fold for storage purposes, bringing the span down to 15 ft.

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NAVAL & MILITARY AERONAUTICS

[The official "Gazettes" and Personal Notices will be found on page 2213.]

GREAT BRITAIN

NAVAL.

Movements of Ships.

It is reported that H.M.S. "Ark Royal" left Port Said for Suez and Aden on Dec. 22nd.

MILITARY.

The Casualty List.

Reported Dec 29th.

Previously reported Missing, now reported Killed.—Harel, Sec. Lt. L. O., R.F.C.
Pinder, Lt. S. R., R.F.C.

The Afghan War.

On Dec. 17th the Titi Madda and Hassan tribes were again bombed, and have now asked for an extension of time for their decision regarding the peace terms.

On Dec. 18th the Derajat column operating against the Mahsuds advanced from Jandola to Mandannakach. Aeroplanes successfully co-operated.

It was officially announced on Dec. 30th that the Mahsuds have surrendered. Among some telegrams, dealing with the situation, sent from India on Dec. 27th, the following was included :—

Our aeroplanes attacked Katkai on Dec. 25th, which had been a place of hostile concentration for the previous four days.

A Golf Club and R.F.C. Officers.

A correspondent writes :—

On Thursday, Dec. 18th, the Court of Appeal, Lord Justice Atkin (Master of the Rolls) and Lord Justice Younger, heard the appeal of the Wey Manor Golf Club against a decision of Mr. Justice Darling refusing to award compensation to the club on a petition of right against the Crown, founded upon an alleged breach of a contract to board a minimum of 20 R.F.C. officers with the club in 1916 and 1917.

During the war a number of R.F.C. officers stationed at Brooklands Aerodrome were accommodated at the club-house, and the question raised in this appeal was whether a statement in a letter to the Military Authorities from the club secretary dated May 26th, 1916, amounted to a contractual obligation by the War Office, or merely to the expression of an expectation, the fulfilment of which was not intended to be grounded upon obligation. A sum of £500 was spent on furnishing the club-house for the officers.

After Oct. 4th, 1917, no officers had been sent to the club, although Brooklands continued to exist as a military station.

The Court, by a majority, dismissed the appeal.—J. F. S.

AIR FORCE.

A Rescue.

Lieut. Wood, R.A.F., a South African, was seriously injured on Dec. 27th while rescuing a woman from drowning in the Thames. He dived from Hammersmith Bridge, a height of about 30 ft., and apparently his head struck the bottom. He was successful in saving the woman.

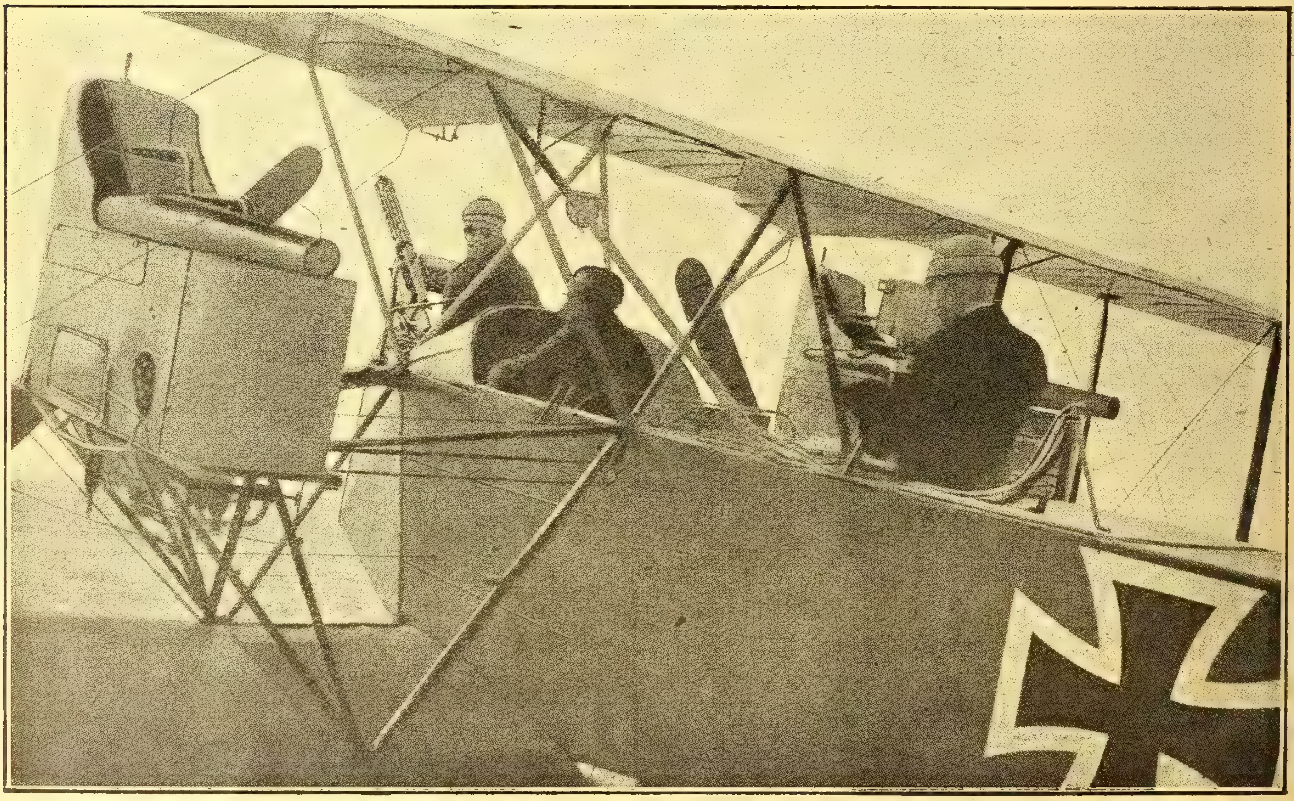
CANADA.

A Death.

Major A. E. McKeever, D.S.O., M.C., a Canadian aviator, died recently at Toronto after an operation necessitated by a motor-car accident.

CHINA.

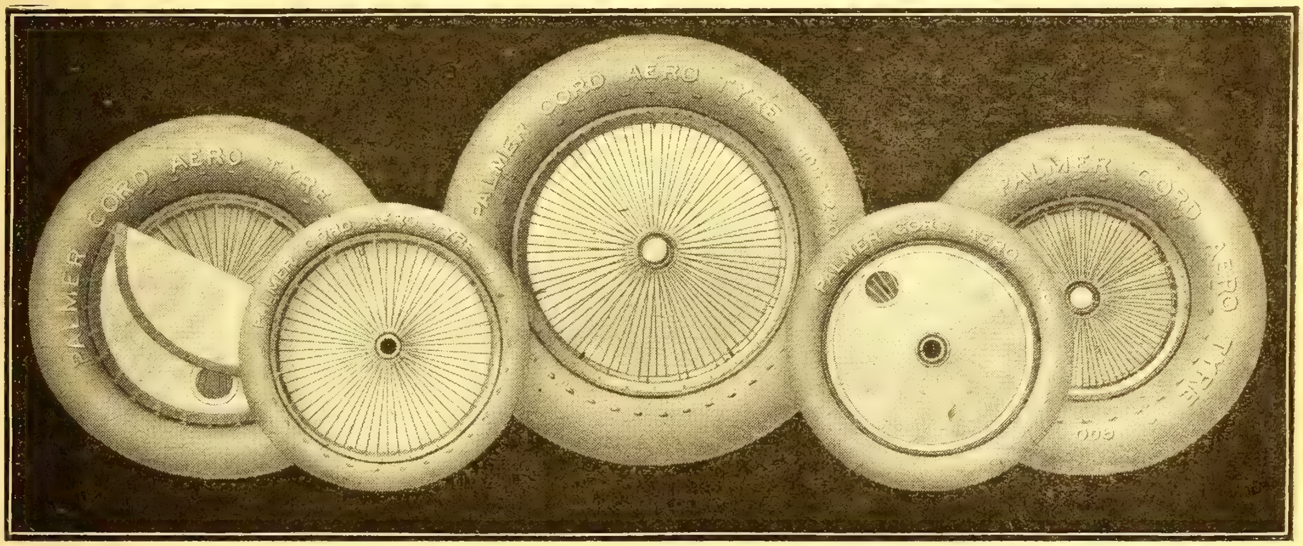
Mr. Tom Gunn, the General Director of Government Aeronautics, Department of Kwongtung, China, recently arrived at San Francisco for a two months' stay in the United States. The purpose of his visit is to complete negotiations for the delivery of aircraft to be used in the preliminary training of Chinese aviators. The Government of China ordered four seaplanes and eight land machines from the Curtiss Aeroplane and Motor Corporation a year ago, and Mr. Gunn will supervise the delivery of these machines.



An early two-engined Siemens-Schuckert Biplane used by the Germans on the Western Front. In the particular example shown the after cock-pit is occupied by a man with a Kinematograph camera who was engaged in taking pictures for the scientific investigation of the machine's behaviour in the air.

PALMER

LANDING WHEELS & TYRES



STANDARD SIZES

Tyre Sizes	Wheel No.	Hub		Track Line
		Length	Bore	
		m/m	m/m	m/m
300×60	16	111.12	25.4	Central
,,	17	72.39	12.7	Central
450×60	30	89.	31.75	Central
,,	138	130.	38.09	Central
575×60	21	160.	28.	Central
,,	34	150.	31.75	104/46
,,	111	150.	38.09	104 46
650×65	78	178.	44.45	132/46
,,	79	178.	44.45	Central
,,	100	178.	38.09	132/46
,,	101	178.	31.75	132/46
600×75	21	160.	28.	Central
,,	34	150.	31.75	104/46
,,	111	150.	38.09	104/46
700×75	78	178.	44.45	132/46
,,	79	178.	44.45	Central
		m m	m/m	m/m
700×75	100	178.	38.09	132 46
,,	101	178.	31.75	132/46
700×100	77	178.	44.45	132/46
,,	92	185.	55.	135/50
,,	95	185.	55.	Central
,,	96	178.	55.	132/46
,,	99	178.	38.89	132 46
,,	112	150.	38.09	Central
650×125	119	178.	55.	132 46
750×125	77	178.	44.45	132/46
,,	92	185.	55.	135/50
,,	95	185.	55.	Central
,,	96	178.	55.	132 46
,,	99	178.	38.89	132 46
,,	112	150.	38.09	Central
800×150	82	185.	55.	135/50
,,	85	185.	55.	Central
,,	131	220.	66.67	Central
		m m	m/m	m m
1000×150	102	185.	55.	125/60
,,	141	250.	80.	Central
,,	201	185.	60.32	125/60
,,	209	185.	55.	Central
,,	210	185.	60.32	Central
900×200	107	185.	55.	Central
,,	108	185.	55.	125 60
,,	128	220.	66.67	Central
,,	137	250.	80.	Central
,,	202	185.	60.32	Central
1100×220	134	220.	66.67	Central
,,	136	250.	80.	Central
1250×250	133	250.	80.	Central
1500×300	115	304.8	101.6	Central
,,	126	304.8	152.4	Central
1750×300	139	400.	152.4	Central

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While in San Francisco Mr. Gunn stated in an interview that little progress had been made in military aeronautics in China, but the recent civil war had proved the need for adequate aerial defence. Naval aviation, he said, was favoured by the great expanse of protected water along the sea-coast.

FRANCE.

Meteorological Stations in France.

In 1920 it is hoped that the meteorological organisation in the aerial arm of the French Army will be greatly developed. Thirty-five stations, divided into three groups, will be installed. The categories of the groups are as follows :—

(i) A central station at Le Bourget (already in existence) which receives long-distance meteorological messages from England, Spain, the Azores, etc. This station will co-ordinate the reports from the regional stations.

(ii) Six regional stations, which will collect information from local stations and submit the general results to Le Bourget. From March, 1920, they will, it is hoped, issue daily a précis of meteorological observations at 1 a.m., 7 a.m., 9 a.m., 1 p.m., and 6 p.m. When possible three aerial soundings will be made daily at 8 a.m., 11 a.m., and 5 p.m.

(iii) Principal and secondary stations reporting to the regional stations.

All these stations will be laid out along the following routes, Paris-London, Paris-Brussels, Toulouse-Rabal, Nimes-Nice, and Marseilles-Tunis.

An Atlantic Flight.

Lieut. Lefranc arrived at Las Palmas (Canary Isles) on Dec. 24th, at 3 o'clock, from Agadir, on his St. Raphael-Dakar flight.

The Trans-African Flight.

Major Vuillemin and Lieut. Dagneaux, who are at present in Algeria organising their cross-African flight, will use two Bréguet biplanes—16.B. and N.2 types—for the flight. Wireless stations will be installed along the route and petrol dumps arranged at various places. Large spare parts will be available at Tamanrasset and Timbuctoo.

Two routes, starting from Oran and Algiers respectively, are considered by experts. They follow the same track from 250 miles short of Timbuctoo to the end of the journey at Dakar. The other route, which is not so popular, lies over Ain Sefra, Timmimimun, Akabli, Inziza Bu Gassa, Kidal, and Burrem to Timbuctoo.

The route which probably will be adopted runs from Algiers to Biskra, Inifel, Insalah, Tesnu, Tamanrasset, Tin Zuaten, and Kidal. The route from Timbuctoo to Dakar will be by Bammako. If the last route be chosen the first stage will be 600 miles, and the succeeding stages be 390, 240, and 480 miles. The last stage, Bammako to Dakar, will be 600 miles.

GERMANY.

The following is taken from the U.S. official publication, the Air Service News Letter of Dec. 3rd, 1919.

Casualties in the German Air Service.

According to reports received from Germany the following are losses of German Air Service during the war :—

	Officers.		Enlisted Men.
Battle	2,857	...	3,047
Training	584	...	1,378
Total	3,441	...	4,425

The number of enlisted men named as casualties is due to the fact that German pilots were not all commissioned.

HOLLAND.

The British Government has officially announced that it was by British aircraft that bombs were dropped on Dutch towns in Zeeland between Aug. 25th, 1917, and June 22nd, 1918. The British Government has expressed to the Dutch Government its regret for these mistakes, and has offered indemnification.

This announcement has given satisfaction to those in Holland who were somewhat annoyed and astonished when the British Government at first saw fit to deny all knowledge of these occurrences.

ITALY.

The Italian correspondent of The Aeroplane writes :—

Teaching Brazil's Navy.

Flying is now permitted to the instructors at Malpensa in order to get on with the instruction of the Brazilian Naval pilots who are there learning to pilot the Sva and Ballila types of Ansaldo machines, and have lost a long fine spell of autumn weather owing to European misagreements.

In the Red Sea.

An aeronautical section has left for the Colony of Eritrea, in the Red Sea, with several Voisin aeroplanes.

A Move.

A daily paper announces that the Lower Adriatic and Ionian Air Command is transferred from Brindisi to Taranto.

The Rome—Tokio Flight.

The latest model F.I.A.T. B.R. is reported to be at Rome for the Tokio regularity flight. Thus the representatives of Italy's landing aeroplanes are completed. Lt. Ranza is stated to be the pilot, and the machine's capacity is called 4,500 kilometres.

The Caproni triplane which joined the waiting crowd at Rome is a Fiat-engined, tri-motored craft with tank fuel and water capacity of 11 hours. She, like the others, is armed, and has suitable accommodation for all her spares, such as wheels, airscrews, tail planes, etc. This machine is called, I learn, a 600, and carries two pilots and two motormen. She will rely on a Crocco route-indicator of naval fame.—T. S. H.

RUSSIA.

Aerial Activity.

A wireless message from General Denikin's forces states :—

Our aviators are making constant raids on the enemy's rear, despite unfavourable atmospheric conditions, causing panic in his ranks. British aviators are taking part in these operations.

Another Bolshevik Capture.

In an official communiqué dated Dec. 21st concerning the capture of Novo Nikolaievsk, the Bolsheviks state that sundry aviation works are included in the assests of the town.

SPAIN.

Some New Military Aerodromes.

Five new military aviation schools are being opened at Madrid, Carthagena, Tarragona, and Seville.

UNITED STATES OF AMERICA.

The American Air Force,

A new Bill has been introduced in Congress by Senator Harry S. New for the establishment of a Department of Aeronautics and for the Development of Civil Aviation.

The Bill is similar to that introduced by Senator New last October, except that it provides for a Department of Aeronautics in place of a Department of Air, increases the salary of the director from 10,000 dollars to 12,000 dollars, and would, in addition to creating a separate air force also have an air force for the Army and an air force for the Navy, each to be operated by the Army and Navy respectively.

The Bill also provides for the establishment of a college for the training of pilots. The Senator hopes that this Bill will meet with the support from the Military and Naval Authorities denied to his former Bill.

In connection with the above it is interesting to note that Senator Wadsworth, the Chairman of the Military Affairs Committee, in demanding a separate department of aeronautics, protested on Oct. 28th, against the elimination of the appropriation for 15,000,000 dollars for military aeronautics as made by the conference committee.

Senator Wadsworth claimed that at present the United States could not put three squadrons of aeroplanes in the field against an enemy, and Senator Thomas said that unless something was done shortly they would have an air service which was inferior to that of Mexico.

A Squadron Move.

The 8th Balloon Coy. (1st Lt. Byront Burt, U.S.A. A.S.) has left Brooks Field for Camp Birnie, El Paso, Texas, to organise the first Army airship station on the Mexican border. As soon as the shed is completed it is hoped to carry out various experiments with one of the new twin engined Army airships.

Cavalry and Aircraft.

In a request for better liaison between cavalry and aircraft on the Mexican border, the Air Service News Letter of Dec. 3rd cites the following instance in support of its argument :—

Some Mexicans having procured illegally some horses and mules from the neighbourhood of Fort Hancock, Texas, a strong force of cavalry and one aeroplane were sent in pursuit. The aviator having located the enemy failed to make the cavalry understand his signals, and by the time he had landed—in U.S. territory—borrowed a horse and found the cavalry, the Mexicans had turned the animals loose.

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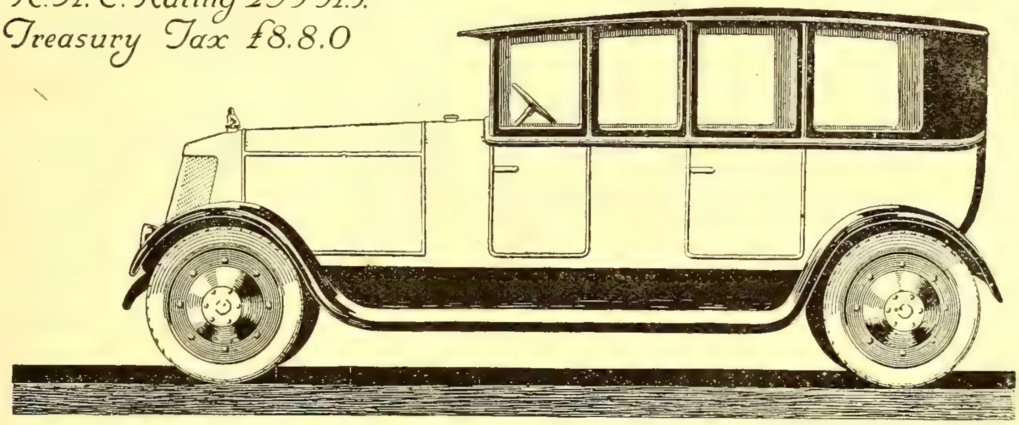

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GREAT BRITAIN.

Civil Aerodromes.

The Air Ministry announced on Dec. 22nd that the following lists of aerodromes are issued as an addition to or amendment of the lists already published.

List C.—(Stations temporarily retained for Service purposes.)

Amendment.—The following seaplane station has been transferred to List E, and is now published in that list.

Seaplane Station : Westgate (S.) Nearest railway station : Westgate. Nearest town : Westgate-on-Sea.

List D.—List of aerodromes licensed as suitable for Avro 504K. and other similar types only. Except in very few instances accommodation does not exist. The licenses have also in the majority of cases been issued for limited periods only.

Aerodrome : Troon. Location of aerodrome : Ayrshire Polo Club Ground. Nearest large town : Troon.

List E.—Stations no longer in use by the R.A.F.

These stations have been passed to the Government Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing grounds in the immediate neighbourhood.

Seaplane Station : Westgate (S.) Nearest railway station : Westgate. Nearest town : Westgate-on-Sea.

THE CONTINENTAL AIR SERVICES.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass
Dec. 22nd	DH9a.	Lt. Game	12.30 p.m.	2.47 p.m.			1
	DH9.	Lt. Tebbit			12 30 p m.	Landed Lympne 3 05 p.m.	1
Dec. 23rd	Weather totally unfit for flying.						
Dec. 24th	DH16.	Lt. Campbell-Orde	12.50 p.m.	2.50 p m.			2
	DH9a.	Lt. Game			12.30 p.m.	3.05 p.m.	0

Dec. 25th—27th—Flying suspended for Christmas holidays.

Each machine carried mail as well as passengers.

On Jan. 1st, 1920, weather permitting, the Airco machines will fly to and from Paris as usual.

On Dec. 22nd two machines arrived at Hounslow from Paris and another from Brussels. Another machine left Hounslow for Brussels, carrying passengers and 154 lb. of freight.

London-Riviera Flights.

Lieut.-Col. G. L. P. Henderson (ex-R.A.F.) and another pilot are going to fly to the Riviera early in January. It is understood that there will be accommodation for four passengers in each machine. Two stops will be made on the journey at Paris and Lyons and hotel accommodation will be reserved at those places by the Lep Aerial Travel Bureau, of Piccadilly Circus, from whom tickets may be obtained.

It is expected that the flights will be completed in two days. The single fare to Monte Carlo, Mentone, or Nice is £50.

On Dec. 22nd 2,000 lb. of patê de foie gras were brought over from Paris in three hours in a Handley Page biplane for Fortnum and Mason, of Piccadilly. A quantity of the paste was sold before Christmas in boxes, with which were given a photograph of a Handley Page machine.

Brooklands.

A correspondent writes :—

The youngest daughter of Mr. W. G. Chapman, of Leatherhead, who has a D.H.6 biplane (90-h.p. Curtiss engine) housed at Brooklands, recently flew in this machine, the pilot being Lieut. Knowles, R.A.F. The young lady, who is only one year and five months old, has probably created a new "record" by her *baptême de l'air.*

The first Martinsyde F.6 was recently tested at Brooklands by Mr. Raynham, and performed exceedingly well. It will be flown to the Paris Aero Exhibition this week. It is almost a two-seater version of the F.4, differing in minor characteristics, which were described in a previous issue of this journal.—J. F. S.

Edinburgh.

A correspondent writes :—

Edinburgh is having her first taste of civilian aviation. Two companies, Berkshire Aviation, Ltd., and the Aerial Photos, Ltd., are at present running a series of passenger flights at one guinea each person.

People in Scotland, and especially in Edinburgh, were inclined to look askance at aviation as a method of travelling, but since the inauguration of the flying meetings on Dec. 22nd hundreds of converts have been made. In the first five days the two companies have given trips to nearly 1,000 persons.

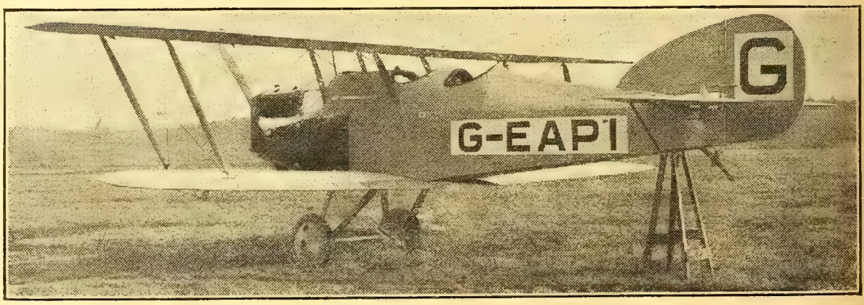
Mr. Alan Cobham is responsible for the piloting of an Avro biplane for the Berkshire Co. at Crewe Toll, Ferry Road, and working with the one machine and flying from ten till dusk he has carried over 500 passengers. In addition to the ordinary flights, Mr. Cobham has been responsible for entertainments in the way of parachute descents and also exhibitions of walking on the wings of the machine whilst in flight. He arranged for the principals from the pantomimes, "Robinson Crusoe" and the "Babes in the Wood," which are appearing in the city, to come to the flying-ground in their pantomime dress, when they were given flights.

Night flying, to give the citizens a chance of seeing the city by night, is to start in two or three days' time, and already bookings have been made.

The Edinburgh "Evening News" and the "Bulletin" have been responsible for the issuing of free flights through the medium of coupons in their papers, and they have been very popular. On Christmas Day, Aerial Photos, Ltd., delivered by aeroplane at their ground at Craigentinny, Portobello, a Santa Claus, who was dressed in the historical garb and who distributed toys and gifts to the children on the ground.

Flying is to continue for another fortnight.—Mac.

THE LATEST MARTINSYDE.—The F.6 two-seater biplane, fitted with a 300-h.p. Hispano-Suiza engine, which has successfully made test flights, and is to be flown to Paris for exhibition purposes this week.



Leatherhead.

Mr. W. G. Chapman, of Leatherhead, whose D.H.6 biplane is one of the few privately owned aircraft in Great Britain, has made a good number of flights lately. On Nov. 30th, with his pilot, he set out from Brooklands for Bournemouth, but at Basingstoke very bad clouds at 1,000 ft. were encountered, so they returned to Leatherhead for lunch.

In the afternoon of Dec. 12th Mr. Chapman flew to Bookham and paid a visit to Gillet Stephens and Co., Ltd. He then continued to Leatherhead, where his eldest and youngest daughters were taken up. The latter was aged 1 year and 5 months.

On Dec. 24th the machine was flown to Leatherhead and trimmed with holly, etc., for a Father Christmas "stunt." Toys for three children were carried by the pilot, complete with red cloak, beard, etc., to Sandown Race Course, where he arrived at 8.30 a.m. The wind was very strong and the machine had to take off down wind between the railings. This was especially difficult as the machine was loaded with a large sack full of parcels for Leatherhead.

A successful landing in the St. John's College grounds was followed immediately by a very heavy rainstorm, but, despite the weather, twenty-four parcels were presented to children. Three more parcels were next delivered at Cherington, and then the machine was flown back to Brooklands.

London.

Hounslow.—The Air Ministry announces that the following Notice to Airmen (No. 3) was issued on Dec. 29th :—

A second experimental aerial lighthouse has been erected at Hounslow Aerodrome to further assist aerial night flying.

This lighthouse is of 70,000 candle-power, and throws a revolving beam that attains its maximum brilliancy once every five seconds.

The light will be in operation every night on and after Monday, Dec. 29th, 1919, and will be exhibited from sunset to sunrise.

AUSTRALIA.

His Majesty's Recognition.

The Air Ministry announced on Dec. 22nd that His Majesty the King has been pleased to confer the dignity of knighthood of the Most Excellent Order of the British Empire, Civil Division, upon Captain Ross Macpherson Smith, M.C., D.F.C., A.F.C., Australian Flying Corps, and also upon Lieut. Keith Macpherson Smith, late Royal Air Force, in recognition of the valuable services rendered to aviation by the recent successful flight from England to Australia.

His Majesty has also conferred a bar to the Air Force Medal on the undermentioned serjeants of the Australian Flying Corps in recognition of their valuable services as mechanics during this flight to Australia : No. 275 Serjt. James Mallett Bennett, A.F.M., and No. 8974 Serjt. Walter Henry Shiers, A.F.M.

The End of the Journey.

Capt. Ross Smith reached Longreach (Queensland) on Dec. 22nd. The place is 1,230 miles from Port Darwin and a little over 1,000 miles from Melbourne. On the journey they were worried by flies and mosquitos which made sleep impossible.

The damage to the airscrew was originally due to a hawk at Calcutta which flew into it and cracked it. The mechanics succeeded in mending the airscrew with only a pocket-knife and broken glass. Pieces of wood were fitted to replace those lost, and the whole was glued and screwed together. The damaged blades were bound with hoop-iron covered with linen fabric.

During the stay at Anthony's Lagoon the temperature averaged 110 deg. There were frequent thunderstorms, when they all hung on to the machine to prevent its being blown over. Since Capt. Ross Smith left Port Darwin he had encountered strong head winds and great heat, which made flying very difficult. Often the machine was thrown about like a cork by the atmospheric disturbances, and the crew were all air-sick.

Capt. Sir Ross Smith, K.B.E., finished his flight at Charleville (Queensland). A part of one of the engines has broken which is irreplacable in Australia, and a Central News message states that the machine is being dismantled. The crew have left the machine and are going south by train.

Charleville is 1,473 miles from Port Darwin and 923 miles from Melbourne.

SOUTH AFRICA.

An Avro at Durban.

The Mayor of Durban christened an Avro biplane "Natalia" on Nov. 19th. He afterwards declined a flight. The machine belongs to South African Aerial Transport, Ltd., and Major Miller of that company stated that it would remain in Durban for another month, and daily flights would be made to accustom the public to aviation.

After the christening ceremony passengers were taken up for two hours.

A Johannesburg-Durban Flight.

On Nov. 15th the Johannesburg "Star" published a special aviation edition, containing many articles about flying generally and descriptions of first flights, etc. Copies of this edition were carried to Durban in a three-seater Avro (110 Le Rhône engine), piloted by Major A. Miller, D.S.O. (ex-R.A.F.), and with a representative of the "Star" as passenger. Stops were made at Newcastle and Maritzburg.

Standerton and Volksrust were also "bombed" quite successfully, but Charlestown was missed by quite a mile on account of the strong wind, and the height at which the machine was flying.

Handley Page, Ltd.

Major H. Meintjes, the South African manager for Handley Page, Ltd., in a letter to the Johannesburg "Star," stated that the first machine, fitted with two 375-h.p. Rolls-Royce engines, had already arrived at Capetown. The fuselage is luxuriously fitted, and contains in all 16 armchairs for passengers. Two of the seats are in the nose of the machine.

Major Meintjes was leaving for Capetown to supervise the erection of the machines. The first flight from Capetown to Johannesburg, with only one stop en route, is hoped for in January.

Muizenberg.

A bishop was one of the passengers taken up at Muizenberg Aerodrome (Capetown) on Nov. 26th. He spent half an hour in the air with Mr. Solomon as pilot in an Avro machine.

CHINA.

The Handley Page machine which was erected in Peking made its first official endurance flight on Dec. 16th with complete success. Carrying 200 lb. of sandbags and fourteen passengers, eleven of whom were Chinese, the aeroplane was in the air for three hours.

As the machine circled down, in token of salute, while passing over the Presidential Palace the stomach of one of the passengers failed him, but the remainder were all delighted with the flight. The selection of the site for this *faillance* suggests a revolutionary movement.

Commercial Developments.

In China, naval aviation is favoured by extensive expanses of protected water along the sea coast, and by long and wide rivers leading into the interior. On the other hand, land aviation is hampered by lack of suitable landing fields, due to the intensive cultivation and terracing of the land, and to the large areas of rice fields.

Six Handley Page biplanes have been received at Shanghai to be placed on an aerial mail route from Pekin across the Gobi Desert to Manchuria and South-Eastern Siberia. Other contemplated routes are from Shanghai to Hongkong, Shanghai to Canton, and Shanghai to Peking.

CZECHO-SLAVAKIA.

The Italian correspondent of The Aeroplane writes :—

The Prague Press states that agreements have been signed with a large British aerial transport company whereby that city becomes the centre of the cross-European lines London-Paris-Hamburg-Warsaw and Constantinople. A large factory is to be started there with English material and personnel. Two-thirds of the share money is to be Bohemian, however.
—T. S. H.

FRANCE.

The Paris-Melbourne Flight Abandoned.

A Reuter telegram from Rangoon dated Dec. 12th stated that owing to the breaking of a piston rod, M. Poulet had abandoned his proposed flight to Australia. He would remain at Moulmein pending preparations for his return home. His aeroplane was being dismantled and will be sent back to France.

M. Poulet's friends will not, however, allow him to abandon his flight to Australia. On Dec. 26th a new aeroplane, subscribed for by his friends, left the Gare de Lyon (Paris) for Marseilles and Calcutta.

The Speed Record.

In dealing recently with the successful (when homologated by the F.A.I.) attack by M. Sadi Lecointe on the speed record on Dec. 15th, it was stated inadvertently that he was flying a Spad biplane. He had at that date severed his connection with the Spad firm, and his record of 307 kilometres an hour was made on a Nieuport biplane (300-h.p. Hispano-Suiza) at Villacoublay.

A Juvisy Meeting.

The Committee of the Paris Fêtes has arranged an aviation meeting to be held at Juvisy on May 22nd and 23rd, 1920.

The Death of M. Bourgeois.

The chivalry of nations is rarely so well revealed as when death gives the opportunity. The funeral services on M. Bourgeois, who was killed whilst flying a Morane-Saulnier "Parasol" monoplane on the military aerodrome of Amadora, near Lisbon, were carried out at the expense of the Portuguese Government, and were conducted with a seemliness and a respect which did honour to that country. The body was transported to France immediately on the conclusion of the obsequies. The final burial will take place at a village near Maubeuge.

The Compagnie Generale Transaerienne.

The Compagnie Générale Transaérienne, which shares the work of maintaining the London-Paris aerial mail, was originally founded in 1909, and is, therefore, the oldest of all existing aerial navigation companies. In the year of its formation it had dirigibles at Pau, Reims and Nancy, and in the three following years had an airship service at Lucerne and at Brussels.

Hydro-aeroplane services were maintained from 1912 to 1914 at Aix-les-Bains, Monaco, Lucerne, Evian and Mentone, and, as "L'Auto" says, did much to popularise aviation. During the war its aerodromes and *matériel* were of considerable use to the military authorities.

In the past summer the company used airships in a Le Havre-Deauville service and for flights from Saint Cyr round Paris.

It is now engaged on its first regular and officially recognised service, and one hopes that its future will be as brilliant as its past justifies.

The Death of an Old Aeronaut.

At Istres, near Marseilles, on Dec. 21st, M. Mario de Montgaillard, who had died a few days before in his 85th year, was buried. He was one of the last survivors of the 80 aeronauts who piloted from Paris during the siege free balloons laden with mails. On Dec. 7th, 1870, he piloted the "Denis Papin," which, with an ill-fortune symbolic of France in those days, came down in the German lines.

M. Santos-Dumont Amuses Himself.

It is said that M. Santos-Dumont, imbued with the charms of Virgil, has opened a model farm in the State of Minas Geraes, in the one-time Empire of Brazil.

The Presidency of the Aero Club de France.

The Aéro Club de France is meeting shortly to elect a President in the place of the late M. Deutsch de la Meurthe. Among the names of those talked of as possible Presidents are MM. Henri Farman, Bessoneau, Soreau, Loucheur, and Blériot.

The Height Record.

On Dec. 20th Lieut. Roget, with two passengers, reached a height of 19,500 ft. thus breaking the existing height record of pilot with two passengers, provided it is homologated by the F.A.I. On Dec. 24th Lieut. Casale, flying a Spad type S.27 (300 h.p. Hispano-Suiza), with two passengers, exceeded M. Roget's record by 2,420 ft., after a flight of 1 hr. 03 min. at Buc.

The Coupe Deutsch.

It is stated from France that the Royal Aero Club has forwarded the entry of a Martinsyde biplane for the Coupe Deutsch.

M. Levasseur and the Height Record.

According to a statement in the French Press, M. Levasseur intends, after the Salon has closed, to make an attempt on the height record with a Levasseur biplane, fitted with a turbo-compresser and a variable pitch propeller.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

The Italian Aero Club.

A meeting of the Italian Aero Club, held at the headquarters of the same in Rome—*via* Tor de' Specchi No. 24—on 14th inst., decided to support the International Exhibition to be held in that city in the autumn of 1920, and, if it becomes a possibility, also the show proposed for the spring at Turin. Also, the club fixed to enter Italy for the Belgian meeting in connection with the Olympic Games.

The possibility of the Schneider Cup being flown for at Naples was mentioned.

The Commercial Airships.

M.1, which has been resting after her strenuous joy-ride work during the summer, when 2,000 passengers were introduced to the freedom of the aerial highways, left Rome on the 17th under the command of Maj. Leone and with Ing. Usuelli on board for Venice, where she arrived after seven hours' travelling. Advantage of the clear, cold atmospheric conditions and the moonlight was taken by starting at 4 a.m. The ship is to be stationed at Venice and ply between that place and the ex-Austrian shores opposite.

The "Angelo Berardi" also left Rome one day the same week for Verona *via* Florence, where she discharged cargo and passengers. The journey was held up some hours between Florence and Verona by fog, but the vessel entered her fresh shed late the same night.

Competition.

A new F.I.A.T. power-plant is going, it is hoped, to *épater* the Palais Royal.—T. S. H.

SOUTH AMERICA.

Aeroplanes are to be used in French Guiana for the transport of gold from the mines at St. Laurent du Maroni, which is separated from the coast towns by a 100-miles' belt of almost impenetrable forest. The first trip was made successfully last October. Hitherto the gold has been taken down in canoes and by porters.

UNITED STATES OF AMERICA.

The Aerial Mail.

Assistant Postmaster-General Otto Praeger, the Chief of the Mail Transportation Service, has announced that the aerial mail service from New York to Chicago will be extended to Omaha shortly, thence to Ogden and from there to San Francisco, with a network of aerial lines from San Francisco to coast cities, including Seattle, Portland, Tacoma, Fresno, Los Angeles, and San Diego. The air routes have been mapped out, and the plans for aerial mail depots are practically completed.

A bill was introduced into Congress on Nov. 6th to authorise the Postmaster-General to purchase aeroplanes and operate aerial mail routes between New York and San Francisco, and such additional points between those cities as he might consider necessary.

Several Martin bombers (two 400-h.p. Liberty engines) have lately undergone tests at Cleveland, and are soon to be put into operation on the aerial mail service New York-Chicago. The machines will carry a crew of three and one ton of mails at approximately 90 m.p.h. They will be equipped with either wireless telegraph or telephone.

It is the intention of the postal authorities to have new aeroplanes specially designed for mail use, capable of carrying at least a ton of mail each and making an average speed of 150 m.p.h. When these are constructed it will be possible to deliver New York mail in San Francisco 32 hours after its receipt by the New York office instead of four days later as at present.

The first aerial mail route in the United States was established on May 15th, 1918, between Washington and New York. The service on that route the first year was 92.3 per cent. successful. Over seven and one-half million letters were carried at a cost of 137,900 dols., which included the replacement of 6 per cent.

A second route was established exactly one year later between Cleveland and Chicago. Fourteen thousand letters were carried each way daily. On July 1st, 1919, the aerial mail service was established between New York and Cleveland with connections at Chicago.

The service at present employs 73 pilots, 28 mechanics and 95 helpers. The pilots are paid a base salary of 2,000 dols. a year with an increase of 200 dols. up to 2,800 dols. for each 30 hours of satisfactory flying.

The Boom of Civil Aviation.

In connection with the statements issued by the Special Commission to Organise the First Aerial Derby Round the World, which were published last week, Secretary Wadsworth speaking on civil aviation on Oct. 28th, said :—

"In July of this year just 14 airplanes were made in the whole United States, while in the same month Great Britain produced 2,000. That shows how we are standing still while others are going ahead."

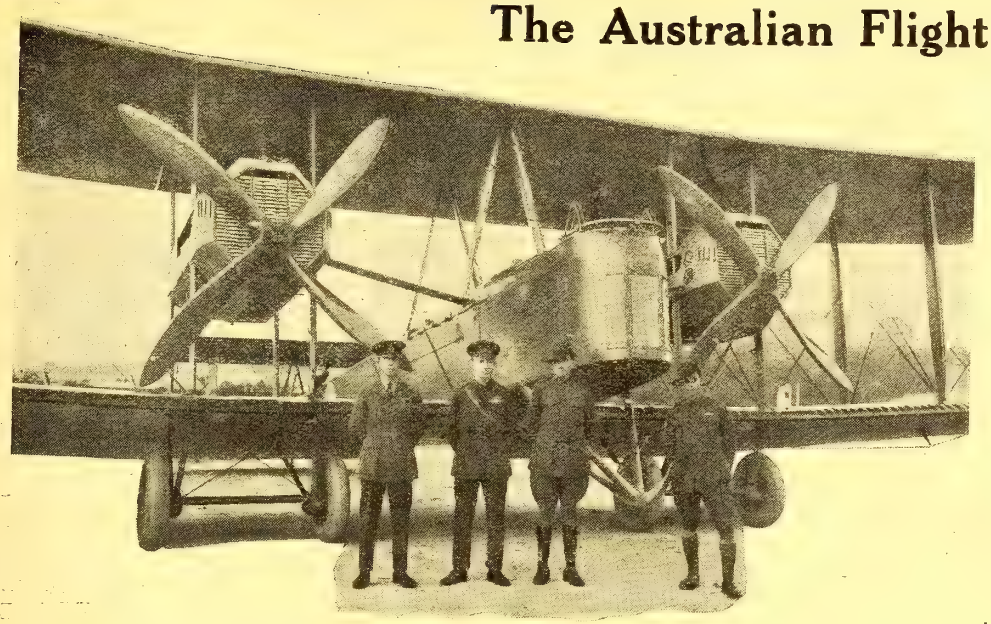
A New Transportation Co.

An air passenger corporation, under the title of California Aerial Transport Co. has been organised recently at Stockton, Cal. The company is said to have several machines already under construction, capable of carrying from six to eight passengers, and expects soon to begin making regular trips between Los Angeles and San Francisco.

A Spare Parts Air Service.

According to "Automotive Industries" of Nov. 6th (published Dec. 5th), the Chandler Motor Car Co., of Cleveland, are employing aeroplanes to deliver parts from Chicago, as the express companies and the mail service proved to be inadequate.

The Australian Flight



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The Vickers-Vimy-Rolls Machine (piloted by Capt. Ross Smith, M.C., D.C.M., A.F.C.), which has just achieved the remarkable success of flying from Great Britain to Australia (10,000 miles in 28 days), was fully equipped with the following Smith Instruments and Accessories :—

Revolution Indicators	**Cambridge Radiator Thermometers**
Airspeed Indicators	**Husun Compasses No. 253**

and the famous K.L.G. Plugs.

It is also worthy of note that EVERY competitor in the Australian Competition—Capt. Matthews (Sopwith); Lieut. Douglas (Alliance); Capt. Wilkins (Blackburn Kangaroo); and Lieut. Howell (Martinsyde)—carried Smith Instruments and Accessories. Proving once again that for serviceability, accuracy and reliability the Smith Aviation Instruments and the K.L.G. Plugs have no equal.

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DAILY TIME TABLE.

HOUNSLOW (depart)... 12.30 p.m.
LE BOURGET (arrive) 2.45 p.m.

LE BOURGET (depart) 12.30 p.m.
HOUNSLOW (arrive)... 2.45 p.m.

Mails

By arrangement with the British and French Post Offices an express air-mail is now carried daily on this route. The fee is 2s. 6d. an ounce, over and above the usual rates of postage, and letters which are handed in during the morning in London, up to the times indicated, and at the Post Offices specified below, will be delivered in Paris by about 4 p.m. the same afternoon.

G.P.O., King Edward's Buildings, 11 a.m.; Threadneedle Street, 10.45 a.m.; Lombard Street, 10.45 a.m.; Parliament Street, 10.45 a.m.; Charing Cross 10.50 a m.; W.C. District Office, 11.10 a.m.; W. District, 11.15 a.m.; S.W. District Office, 10.40 a.m.

Passengers

The passenger fares are as follows:—Single, £21; return, £42. This fare includes free conveyance by motor-car to Hounslow Aerodrome from any point within a mile of Piccadilly Circus, and also conveyance by motor from Le Bourget into Paris. Similar arrangements exist as to the journey from Paris to London. A passenger, called for at an hotel in London at 11 a.m., arrives at the door of his hotel in Paris by 4 p.m. the same afternoon.

Parcels

The rate for parcels is 5s. lb., but in the case of parcels weighing more than 2 lbs., or for regular consignments, much lower rates can be quoted If handed in up to 10 a.m. at the agents specified below, parcels will reach Paris the same afternoon; whereas by land and sea, even if a special "Grand Vitesse" fee is paid, a parcel is several days, and perhaps a week, in reaching its destination.

Full particulars regarding freights can be obtained from Aircraft Transport and Travel, Ltd., 25-27, Old Queen Street, S.W.1., or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C., and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street, and Beak Street, W.; Carter Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; Lep Aerial Travel, Piccadilly Circus (Criterion Corner); and Hernu, Peron & Co., 98-100, Queen Victoria Street, E.C.

NOTE.—Parcels are received up to 10.30 a.m. at the two depots mentioned above of the American Express Company; or up to as late as 11.30 a.m. at the Hounslow Aerodrome.

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
25-27, Old Queen Street, S.W.1.

PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysées.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE PRODUCTS OF THE BRITISH AIRCRAFT INDUSTRY.—III.

In the two previous issues of this paper there have been described under this heading the aircraft, aero-engines, and accessories manufactured by the British and Colonial Aeroplane Co., Ltd., the Westland Aircraft Works, Wm. Beardmore, Ltd., Austin Motors, Ltd., Martinsyde, Ltd., Parnall & Co., the Aircraft Manufacturing Co., Ltd., Short Bros., Ltd., Rolls-Royce, Ltd., the Cosmos Engineering Co., Ltd., A. V. Roe & Co., Ltd., the British Aerial Transport Co., Ltd., Mann, Egerton & Co., Ltd., Handley Page, Ltd., S. E. Saunders, Ltd., the Supermarine Aviation Works, Ltd., the Central Aircraft Co., Walton Motors, Ltd., Gwynnes, Ltd., Austen Siddeley Motors, Ltd., the Aircraft Steel Construction Co., Ltd., the British Thomson-Houston Co., Ltd., the Steel Wing Co., Ltd., Samuel Osborn & Co., Cellon, Ltd., Edgar Allen & Co., Ltd., Titanine, Ltd., Bruntons, Ltd., British Magnetos, the Triplex Safety Glass Co., Ltd., Swift, Levick & Co., Herbert Terry, Ltd., Hall & Pickles, Ltd., and Brown Bros., Ltd.

A further series of the products of other members of the Industry will be found below.

BOULTON AND PAUL, LTD.

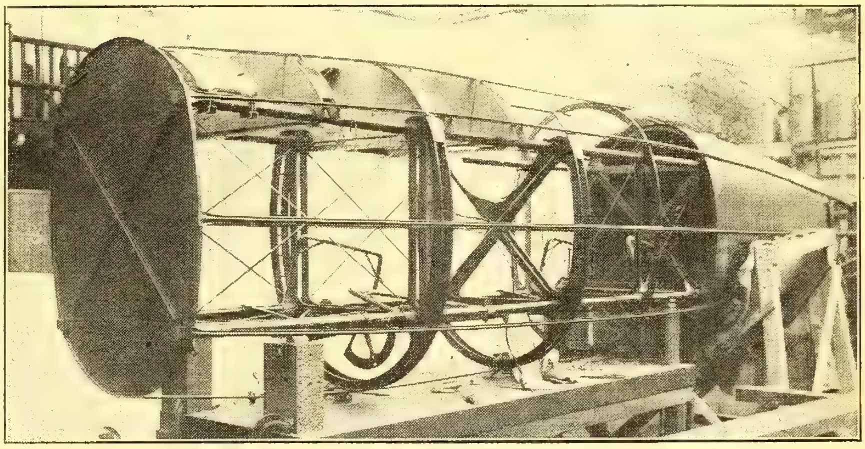
AN ALL-METAL MACHINE.

During the last few years there has been a demand for an all-metal type of aeroplane which can fulfil the following conditions :—

The structure must be fireproof, immune from insect attack in tropical countries, and varying climatic conditions must not produce distortion.

Certain machines have been designed to meet the above-mentioned requirements; generally, however, they have been heavy and expensive to produce, and, with only a few exceptions, the wing structure has not been entirely of metal. If one studies the detail of design of this type of machine, it will be also found that no departure has been made from the type of construction usually associated with aeroplane structures of wood—the only difference being that steel tubes have been substituted for wood members.

For a considerable period Messrs. Boulton and Paul have concentrated on the development of rolled sections made from thin steel strip having high mechanical properties; and as the result of this work, they have produced suitable sections which can be used on aircraft giving the necessary strength for the weight allowed.



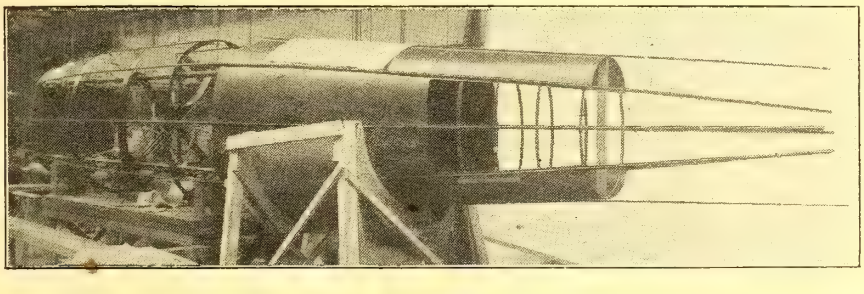
Fore End of the Fuselage of the Boulton and Paul P.10.

With the steel sections available, an actual all-metal machine has been produced—the construction being entirely novel, and meeting all the necessary conditions desirable for aircraft for use in any part of the world.

The machine is similar in size to the firm's standard P.9 model, being a two-seater tractor, and having all the aerodynamical features of this approved design.

Considering the detail construction of the all-metal machine, the fuselage is built up of hoops and longitudinals suitably placed, both being of special rolled steel sections; between the hoops and longitudinals is interposed and riveted a special fibre sheet, a material possessing mechanical properties particularly suitable for this work. The fuselage when complete is very light and gives a good low resistance shape.

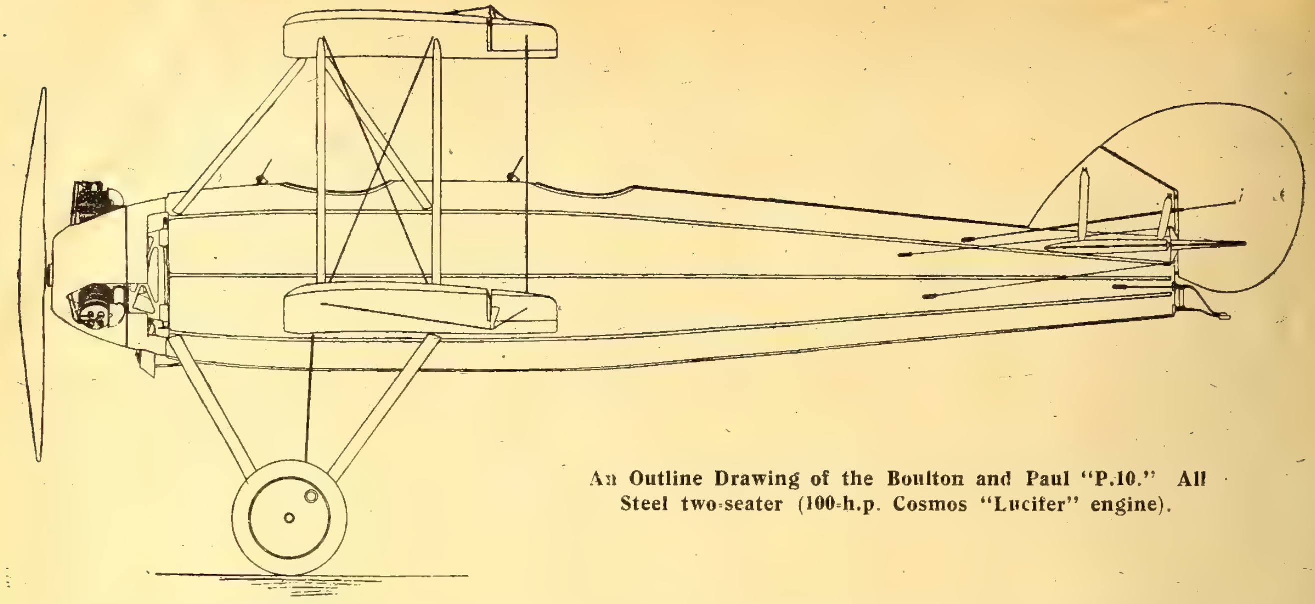
The fin is built integral with the rear portion of the fuselage, the rear fin post carrying the rudder in the usual manner.



The Steel Fuselage of the Boulton and Paul P.10, in course of construction.

The wings, flaps, tail plane, elevator and rudder are constructed from rolled sections, each member being specially designed to fulfil its own particular function; the spar section in particular is that chosen as most suitable after a series of tests had been carried out on different sections, extending over a long period.

The 100-h.p. "Lucifer" engine is fitted as the power unit, and is carried on a mounting so arranged that by removing the vertical hinge pin on one side the whole engine and



An Outline Drawing of the Boulton and Paul "P.10." All Steel two-seater (100-h.p. Cosmos "Lucifer" engine).

mounting may be swung about the opposite vertical hinge, thus allowing easy access to the back of engine for inspection, and for making any necessary adjustments. With this arrangement, the controls, pipe lines, etc., are so designed that they do not require disconnecting when swinging the engine mounting.

The complete machine is undoubtedly an entirely new departure from standard practice, and it is claimed that it fulfils all the functions required of an all-metal machine, giving a high factor of strength combined with lightness, which has hitherto been unobtainable in this class of aeroplane.

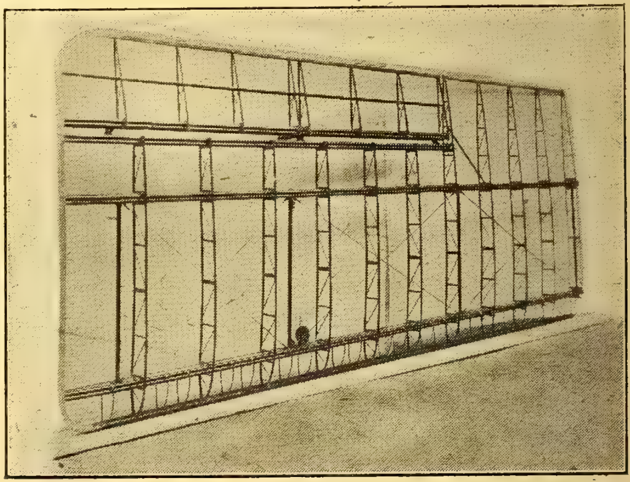
SPECIFICATION.

Engine—	
Cosmos "Lucifer" type	100 h.p.
Air-cooled, fitted with four-bladed airscrew	7 ft. 6¼ in. dia.
Performance—	
Speed, fully loaded, 104 m.p.h. at	1,000 ft.
Climb, fully loaded, to 5,000 ft.	8 min.
Ceiling	14,000 ft.
Weight—	
Machine empty	1,104 lb.
Useful load (crew, fuel, and luggage)	596 lb.
Total weight, fully loaded	1,700 lb
Load, per sq. ft.	5.5 lb.
Weight per b.h.p.	17 lb.
Duration—	
At 3,000 ft. and 100 m.p.h. is	3¾ hr.
At 3,000 ft. and 90 m.p.h. is	5 hr.
Fuel—	
Petrol	26 gall.
Oil	3 gall.
Principal Dimensions—	
Span of wings	30 ft.
Length	26 ft.
Height	12 ft.
Gap of wings	5 ft. 6 in.
Chord of wings	5 ft. 6 in.

THE BOULTON AND PAUL "P.8."

The Boulton and Paul P.8 was originally designed for the Atlantic flight and is more or less a peace-time and improved version of the Boulton and Paul "Bourges" twin-engined bomber and fighter. As the only erected machine stands, at present, there is no definite accommodation for passengers and goods, as it is the actual machine built for the Atlantic flight, but Boulton and Paul, Ltd., propose to fly and test the machine as it stands before definitely arranging the interior accommodation.

Constructionally the machine follows general practice. The fuselage is built up in the usual way, having four longerons, cross-strutted and braced with standard tie-rods. Tubular rivets are used throughout instead of the ordinary threaded bolts. From the top longeron, which is level when the machine is in flying position, a series of bridges and runners carry the fairing right up so that the gap between the planes is entirely filled. Under the centre-section of the planes, and in the fuselage is carried the main petrol tank, which has a capacity of 210 gallons, the feed to the engines being by gravity from the main tank.

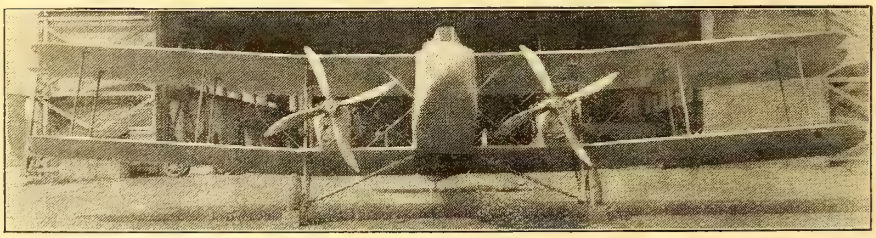


One of the All-Steel Wings of the Boulton and Paul "P.10."

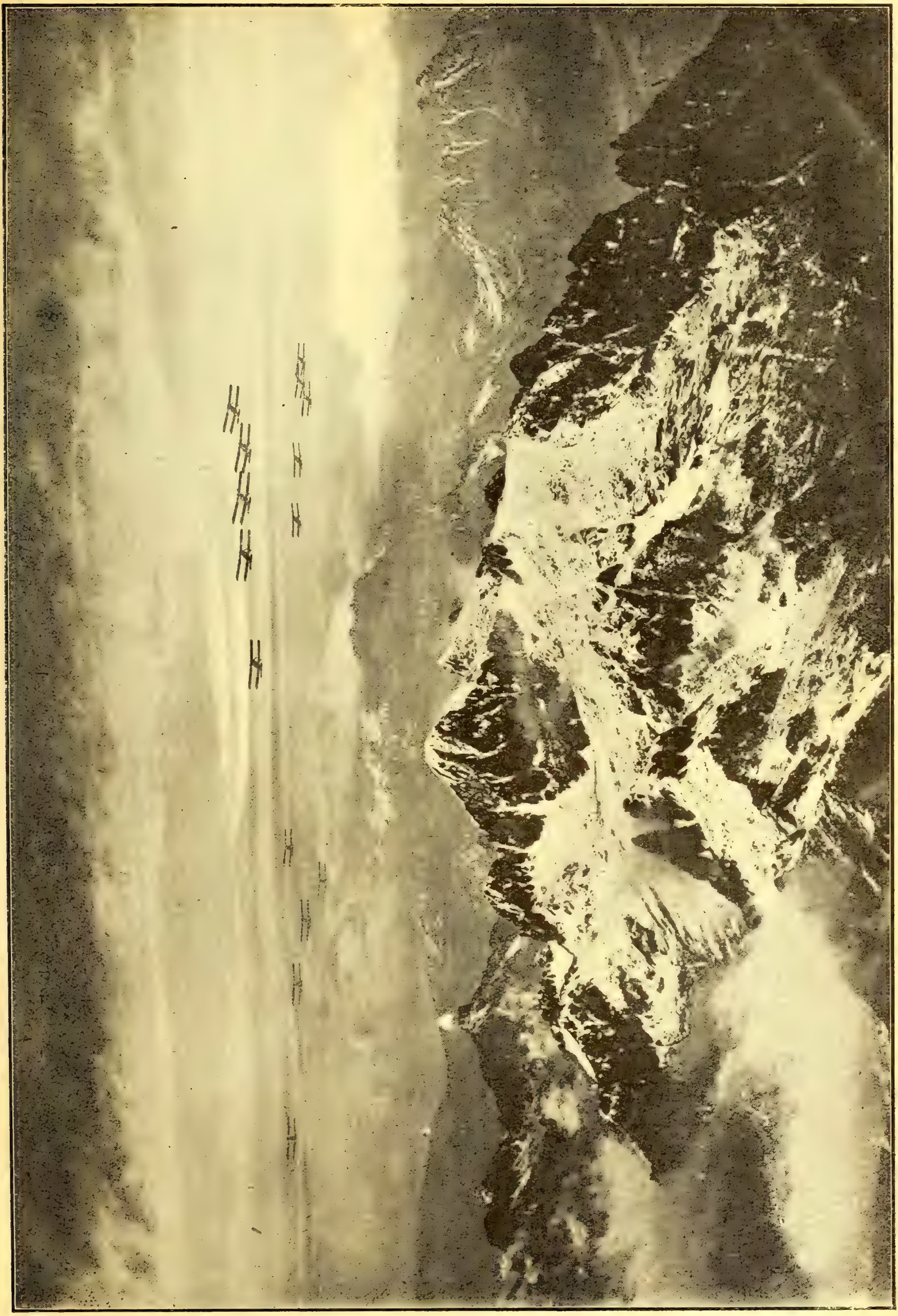
The nose of the machine, which is finished off by a circular nose-piece made of veneer and fabric, carries the pilot. In rear of the pilot, and in front of the main tanks there is accommodation for three passengers. Behind the main tanks and aft the main planes four passengers can be carried. Above the pilot's head is a wind screen arrangement which can be opened or closed at will. Owing to the shape of the nose there is absolutely no draught felt at all when the pilot is flying without a wind screen, the protection being provided more or less for comfort in so far as the temperature of the atmosphere is concerned.

Control is normally by wheel and rudder-bar, but it is possible by an ingenious arrangement to lock the lateral and longitudinal control surfaces and steer entirely by means of the wheel control. This is a great advantage, especially for long-distance flights.

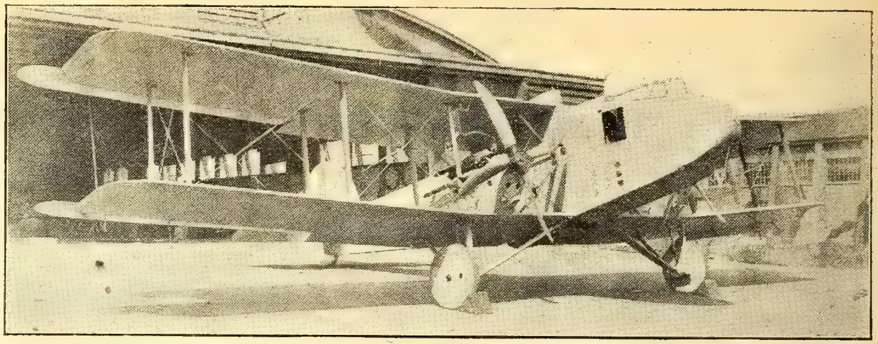
On the left-hand side of the pilot is a wheel for lowering and raising the radiator, on the right-hand side are two wheels, the rear one for setting the auxiliary fins on the elevators in order to offset the unequal pull and the consequent loss of directional control should one engine cut out, and the other for controlling the angle of inci-



Front view of the Boulton and Paul P.8 (2 Napier engines, 480 h.p. each).



THE COMMAND OF THE AIR.—A skilfully arranged Official Photograph, showing a formation of Bristol Fighters over the Italian Alps.



The Boulton and Paul P.8 Machine (two Napier engines, 450 h.p. each).

dence of the tail-plane. On the left-hand side are the two sets of engine controls, the rear pair being for ordinary adjustment, whereas the front pair are for altitude control.

In addition to the ordinary instruments carried, are two electrical revolution counters, the main mechanism for which is carried in the engine housing—the connection to the indicators in the cockpit being by ordinary electric cable. In the event of these instruments failing two supplementary dials of large size are carried on a board, one above each engine housing, which can easily be seen from the pilot's cockpit. Two oil pressure gauges are also carried on each board, which is covered by a hood and fitted with an electric bulb for night flying.

The two Napier engines are carried on bearers of light but strong construction resting on the lower plane. The bearers are made of a wooden framework covered with plywood, the engine feet being carried on steel channel bearers. The engines are coverd in with a neat cowling of aluminium in the rear of which are carried the main oil tanks. A self-starting magneto is also carried in the rear of each engine.

The engine beds are braced to the fuselage by diagonal tubes which, with the wire bracing, form a perfect triangulation.

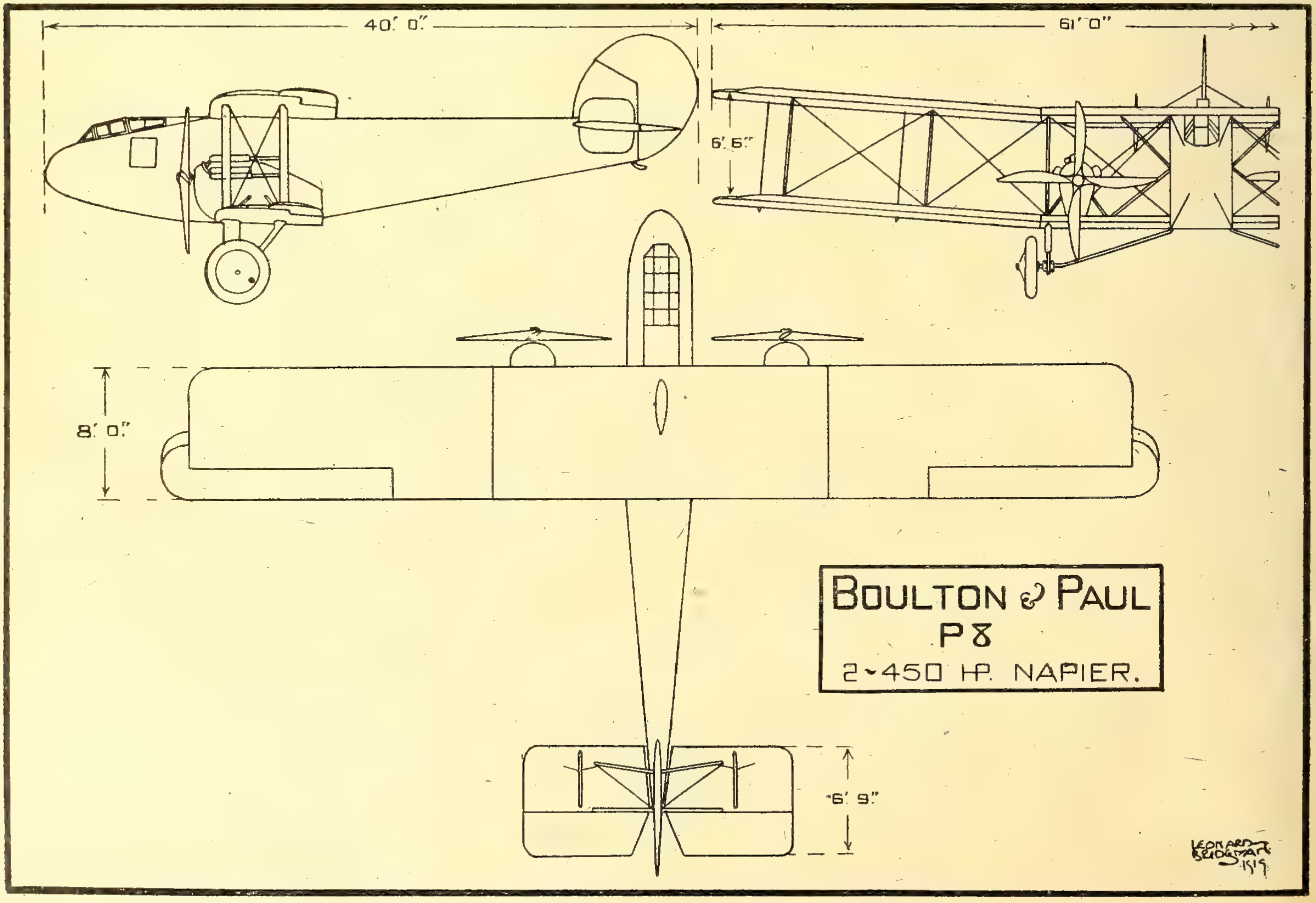
The engines are fitted with exhaust manifolds of Boulton and Paul's own design, each manifold consisting of four aluminium castings which have cooling fins cast on them, the joints being sealed with asbestos washers. A pipe with a closed end, but slotted throughout its length, is fitted on the rear of this manifold, and almost completely silences the engines. The main planes are of equal span, and all four planes are fitted with balanced ailerons. The tail unit consists of a large balanced rudder and fin, a rectangular tail plane and unbalanced elevators together with the two controllable fins carried on the tail plane as already mentioned.

The undercarriage consists of two Vees, one under each first set of interplane struts. The cross axle is hinged at the centre to the two bottom longerons of the fuselage and carries at each end one large size Palmer aero wheel. The springing is partly by rubber cord and partly oleo-pneumatic.

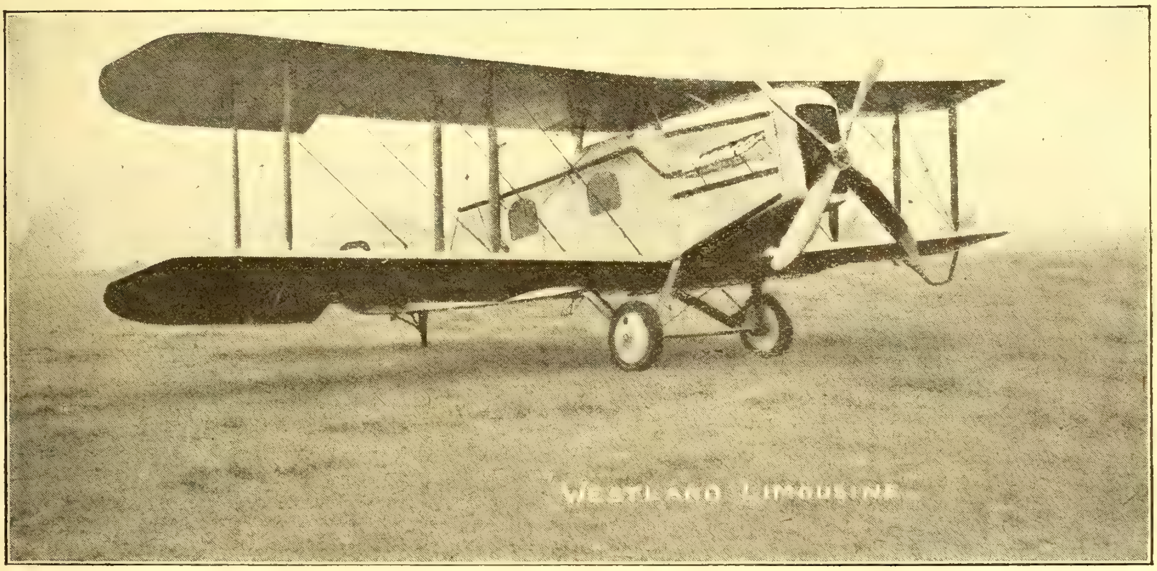
The main radiator is carried under the fuselage and is controlled from the pilot's cockpit. Although the one radiator takes the cooling water for both engines, it is possible, by means of a series of four valves to cut out one side completely should a leak develop in the pipe lines.

Specification.

Type of machine	Twin-engined Tractor Biplane.
Purpose for which intended	Passenger and Commercial.
Span	59 ft.
Gap	6 ft. 6 in.
Overall length	40 ft.
Maximum height	12 ft. 4 in.
Chord	top plane, 8 ft.; bottom plane, 6 ft. 6 in.
Total surface of wings	770 sq. ft.
Span of tail	16 ft.
Total area of tail	96 sq. ft.
Area of elevators	96 sq. ft.
Area of rudder	21 sq. ft.
Area of fin	14 sq. ft.
Area of ailerons	27 sq. ft.
Engine type and h.p.	two 450 h.p. Napier "Lion."
Airscrew, diameter and revs.	9 ft. 6 in.; 1,450
Weight of machine empty	4,000 lb.
Load per sq. ft.	9.75 lb.
Weight per h.p.	8.34 lb.
Tank capacity in hours	4 hr.
Tank capacity in gallons	210 gall.
Performance—	
Speed at 10,000 ft.	149 m.p.h.
Speed at 15,000 ft.	142 m.p.h.
Landing speed	54 m.p.h.
Climb—	
To 10,000 ft. in min.	8 min.
To 15,000 ft. in min.	15 min.
Disposable load apart from fuel	2,000 lb.
Total weight of machine loaded	7,500 lb.



WESTLAND



If you are visiting the Paris Aeronautical Exhibition we shall be pleased to show you the Westland "Limousine" on Stand 20.

We shall also have another machine at Le Bourget Aerodrome for giving demonstration flights.

Above is illustrated the model we intend to exhibit. The first machine, which has been flying since last July, has proved an ideal machine for mail carrying or passenger transport-de-luxe.

For full particulars and arrangements as to trial flights apply to our London Representative, **Lieut.-Colonel C. H. MEARES,** c/o MESSRS. PETTERS LIMITED, 6, DEAN'S YARD, WESTMINSTER, LONDON, S.W.1.

WESTLAND AIRCRAFT WORKS

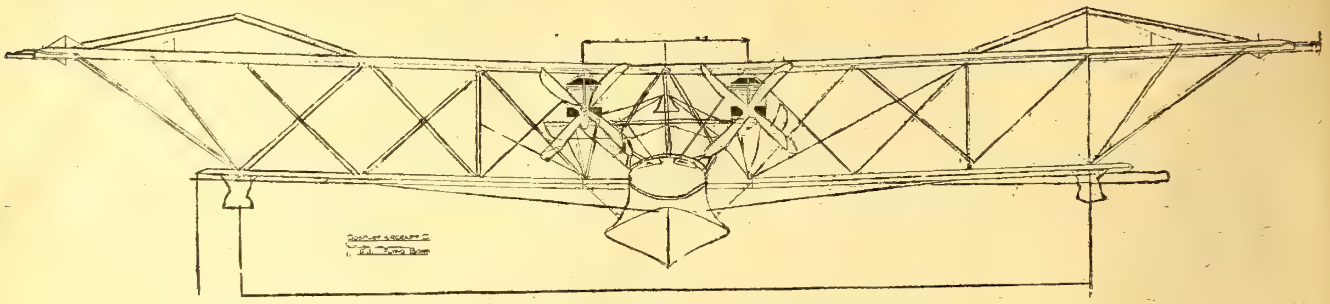
(Branch of Petters Limited)

YEOVIL.

Telephone:
141 and 142 YEOVIL.

Telegrams:
AIRCRAFT, YEOVIL.

THE GOSPORT AIRCRAFT COMPANY.



Front Elevation of the Gosport "G.5" Flying Boat.

The flying-boat programme of the Gosport Aircraft Co. for the year 1920 was arranged in conjunction with the late Col. J. C. Porte, C.M.G., who joined the staff early in August, 1919. Several new designs were produced, and the types which had proved so successful during the late war were considerably improved and modified to suit commercial requirements.

In this way four types were evolved, consisting of a large, a medium, and two smaller flying-boats.

It is unnecessary to describe in detail each type, as the general features are similar in all models. It is proposed, therefore, to describe briefly the medium sized flying-boat known as the "G.5," and then to indicate any particular features or departures in the other types.

THE GOSPORT "G.5."

This flying boat was designed to fulfil the requirements of two quite distinct specifications in which moderately high speed was common to both. Owing to the roomy hull it will be realised that the same boat may be used for a variety of purposes, provided the same aerodynamic qualities are retained throughout.

Such being the case this flying-boat was designed either as a carrier of passengers, mail and cargo, or either alone or alternately as a machine to operate in Canada or in U.S.A. for the purpose of locating forest fires and carrying personnel and fire-fighting appliances to the conflagration in the shortest possible time.

The utility of a flying-boat in a country which is densely wooded, but where there are numerous lakes and fairly broad rivers, is easily understood.

GENERAL.—The "G.5" is a twin-engined biplane, generally fitted with two 360-h.p. Rolls-Royce "Eagle VIII" engines, but either 450-h.p. Napier "Lions" or 500-h.p. Cosmos "Jupiters" may be fitted.

The top plane is of larger span than the lower plane, and is built up in five parts—a centre section, inner planes, and extensions.

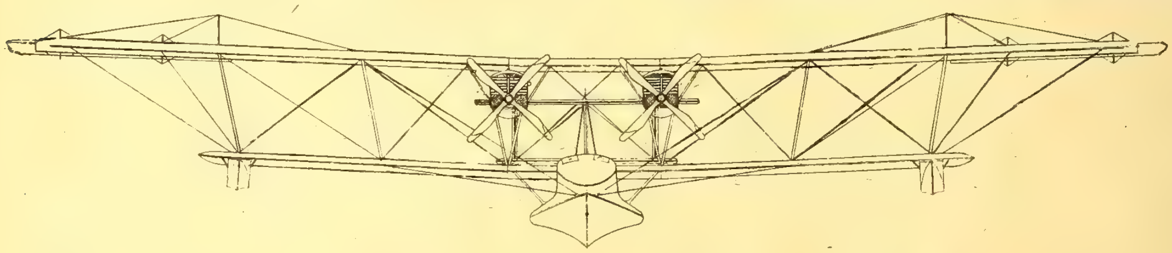
The lower plane consists of two portions—a port and a starboard plane, attached to the hull at the wing roots. To the lower plane are fixed the wing tip floats, which are of boat type construction, double diagonal planking on the bottom and Saunders' Consuta plywood on sides.

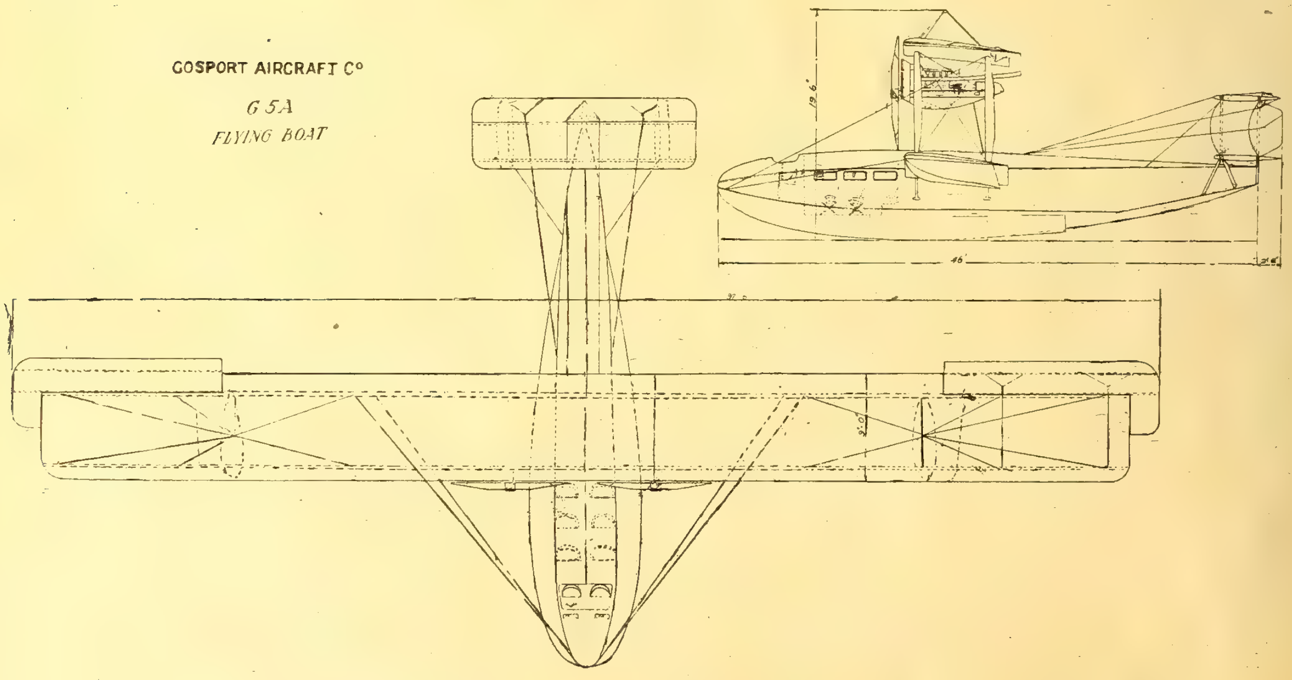
The two engines are mounted between the planes in the usual manner.

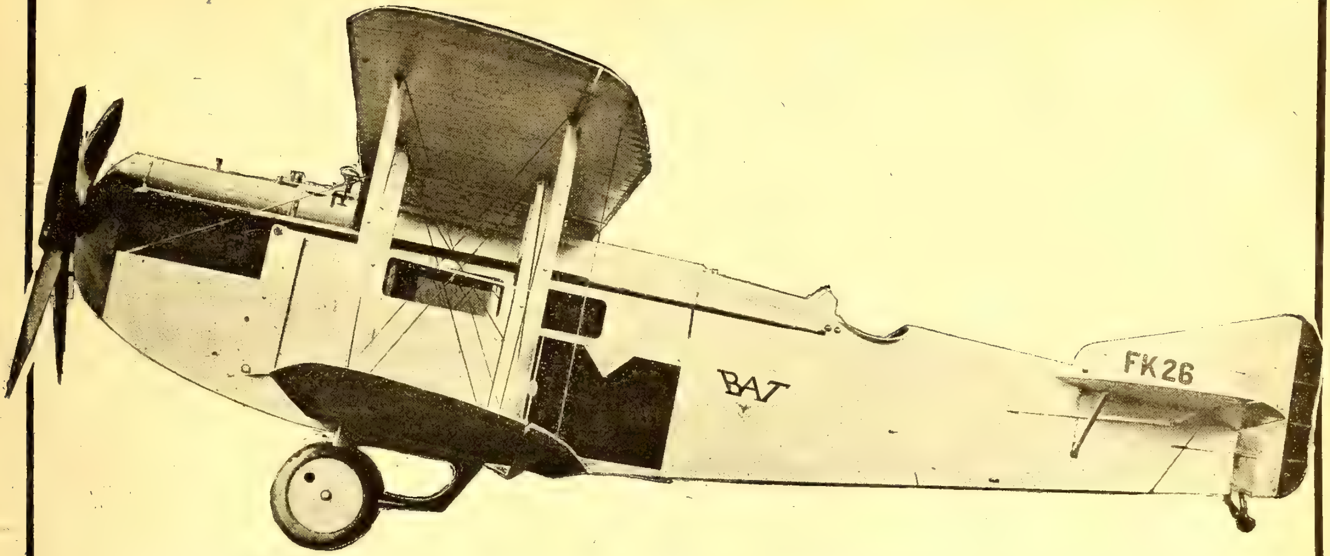
The whole wing structure is secured to the hull transverse bracing unit, which is continuous from port to starboard and integral with the main fore and aft hull structure. This is a feature of all these type hulls, and possesses great advantages over any other type so far built. This point will be described in more detail later on.

In one model the wing sections immediately above the engines are removable without disturbing the main structure, thus greatly facilitating removal of the engines for overhauling, etc.

The tail unit may either be of monoplane or biplane type; if the latter, the elevators on the top plane are operated by the







THE IDEAL COMMERCIAL AEROPLANE

The machine here illustrated is the B.A.T—F.K.26—universally acknowledged to be the most practical and efficient commercial aeroplane yet produced. Although a relatively small machine—only 34 feet in over-all length—it possesses surprisingly commodious cabin and cargo accommodation. Four passengers can be carried comfortably, with ample room for personal luggage, or, alternatively, parcels or mails to the extent of 1,000 lbs. in weight and *150 cubic feet in capacity.*

Here are some additional interesting points concerning the machine :—

ENGINE :— 375 Rolls - Royce Eagle VIII.

SPEED :—45-120 m.p.h.

CABIN :—Is clear of any transverse cross bracings or other obstruction, and measures 8 ft. by 3 ft. 3 ins. by 6 ft.—this in a machine of 34 feet over-all length. Direct entry off ground through ordinary door.

LOAD :—With 600 mile range of fuel—1,000 lbs.

FUEL COST AT FULL LOAD: —7.2 pence per mile.

CHASSIS :—A sturdy job, sprung by an unique combination of oleo and rubber shock absorbers.

TAIL :—Can be trimmed in flight from pilot's seat—steerable and practically unbreakable tail skid.

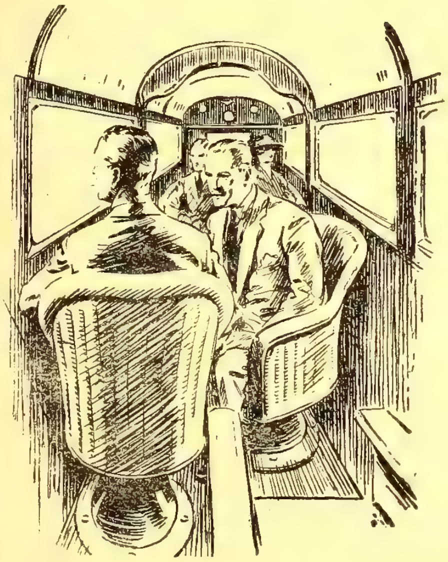
GENERAL CONSTRUCTION: —Straightforward — simple to repair and recondition.

The B.A.T. F.K.26 as a commercial machine has so many natural advantages, and is so moderate in first cost, that it is really *the ideal machine* to employ in inaugurating air transport services.

A demonstration flight can be arranged and all particulars obtained on application to :—

THE BRITISH AERIAL TRANSPORT CO., LTD.
38, CONDUIT STREET,
LONDON, W.1.

Telephone : Mayfair 637 and 638.
Telegrams : Batigram, Reg, London.



An impression of the interior of the cabin of the F.K.26.

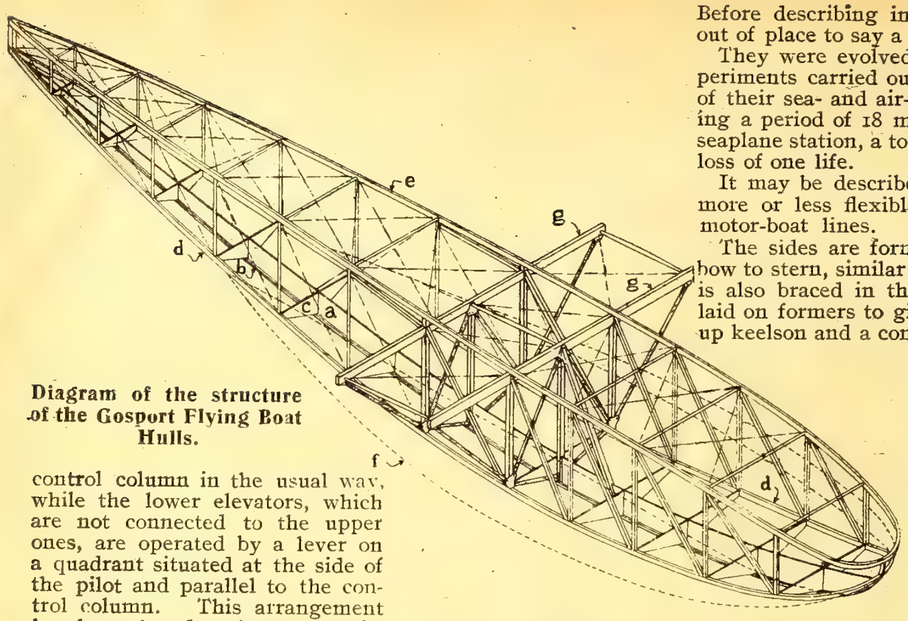


Diagram of the structure of the Gosport Flying Boat Hulls.

control column in the usual way, while the lower elevators, which are not connected to the upper ones, are operated by a lever on a quadrant situated at the side of the pilot and parallel to the control column. This arrangement has been found to be very satisfactory, the lower elevators being used for trimming in the same manner as an adjustable tail.

All flight controls, which are of the usual type, are balanced, with the exception of elevators. The use of servo motors has been found unnecessary.

POWER INSTALLATION.—The engines are mounted on spruce bearers capped with ash, which in turn are supported by V struts between top and bottom plane spars.

The radiators are situated in front of engines and supported by the same bearers. They are fitted with shutters and thermometers, both connected up to the engineer's cockpit.

Inside the hull is carried a reserve water tank of ten gallons capacity, from which make up water is circulated to each radiator separately by means of a small hand rotary pump. The overflow from the radiators is led by a pipe therefrom to an open funnel leading to the above tank. This renders the amount of overflow clearly visible to the engineer.

A ten-gallon oil tank is fitted behind each engine.

The petrol system is positive feed from main tanks by means of two centrifugal pumps to gravity tank situated in the top plane, thence by gravity to engines. In the event of failure of this system, petrol may be fed direct to engines from main tanks. A hand pump of the semi-rotary type is fitted as a standby. The petrol overflow pipe from the gravity tank is led into the main petrol tank filling system and is selective, that is, it may be led into any tank at will, thus assisting to keep the machine trimmed.

The tanks are filled from a connection on the outside of the boat, thus keeping hull free from petrol.

The two centrifugal pumps are incorporated in one casting which also forms a combined filter and change-over cock. The pumps, which are situated about two feet from bottom of tanks, are driven by a wind propeller through two sets of bevel gearing, thus doing away with a large suction head on the pump, and so minimising risk of air leakage into the suction side of the system. The filters, two in number, are so arranged that either may be removed in turn and cleaned without disturbing the flow through the pumps.

A pipe leads from the bottom of each tank to a combined pump and distributor box, thence through non-return valves to the pumps, via filters.

HULL.

The hull, which is of the latest "Porte" type construction, forms perhaps the most important feature of these flying-boats. Before describing in detail the construction, it may not be out of place to say a few words about them generally.

They were evolved as the result of extensive full-scale experiments carried out during the past five years. As a proof of their sea- and air-worthiness it may be remarked that during a period of 18 months' operation of these boats from one seaplane station, a total of 198,600 sea miles were flown without loss of one life.

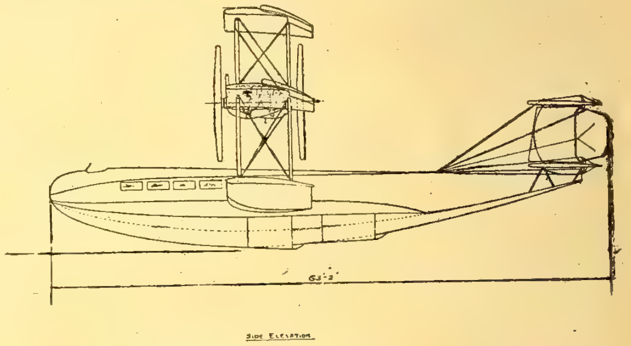
It may be described as a rigid compounded with the usual more or less flexible construction which follows high-speed motor-boat lines.

The sides are formed by two braced girders running from bow to stern, similar to the ordinary braced fuselage. The top is also braced in the same way, and is covered with fabric laid on formers to give a good streamline form. A deep built up keelson and a continuous keel run from bow to stern in the usual manner. Built-up floors connect up the keel to the two bottom longerons.

Timbers spaced about 9 in. apart run without a break from top longeron on one side, over keel to top longeron on the other side. The planking, which is double diagonal, runs from keel to top longeron on either side and is continuous round the fin chine, thus eliminating two joints which are always troublesome to keep water-tight. The steps, two in number, are detachable without interfering with hull planking, and are supported on fore and aft ash bearers.

At the wing roots there is a complete transverse bracing unit under each spar connecting up port and starboard lower planes.

Two great advantages result from this construction. Firstly, all flight loads are directly coupled up in one complete structure, thus ensuring the machine keeping in truth—this applies especially to the angle between tail plane and main planes. Secondly, the resultant weight of the complete boat passes through the keel, thus avoiding distortion and local stresses when on the trolley.



Side Elevation of the Gosport "G.9."

Apart from the structural side of the design, the general layout is the result of full scale experiments, and has been found to be very satisfactory.

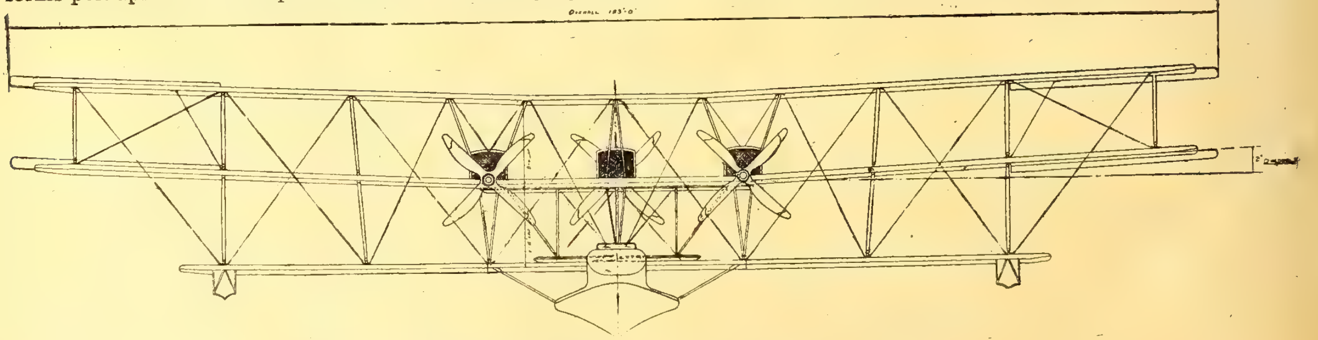
As in all engineering problems a compromise has to be made, and in this design it is believed the best has been attained.

Great care has been taken with detail design, resulting in maximum strength with a minimum of weight. A factor of loading of four is obtained throughout.

THE GOSPORT "G.8."

The "G.8" was produced to meet the demand for a small, handy, reliable flying-boat, in which a high speed was not essential. It has a very low-landing and getting-off speed, and owing to the fairly large hull is dry and seaworthy.

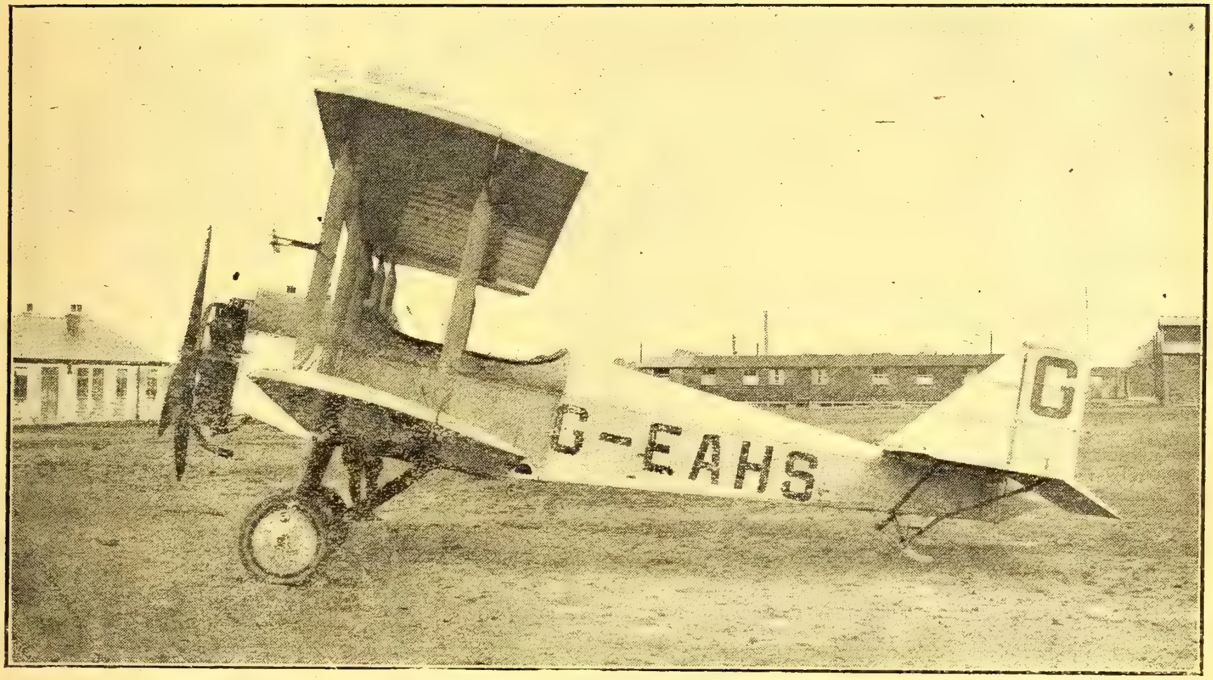
It may be used for a variety of purposes, such as carrying



Front Elevation of the Gosport "G.9" Triplane Flying Boat.

LEARN TO FLY

ON A



100 h.p. "CENTAUR 4."

THE TRAINING MACHINE

OF THE FUTURE.

The last 6 Pupils have obtained their R.A.C. Pilot Certificates in the amazingly short times of:

4 hrs. 45 minutes — — MISS MCMAUGH.
3 hrs. 30 minutes — — MR. M. TANNER.
3 hrs. 15 minutes — — MR. W. POOL.
2 hrs. 5 minutes — — MR. E. C. GODSIL.
1 hr. 40 minutes — — MR. T. RUSSELL.
*** 1 hr. 30 minutes — — Mr. R. G. COMANS.**

*** WORLD'S RECORD**

at

The Central Aircraft Co.'s School of Aviation

NORTHOLT AERODROME.

Write for full particulars of Combined Practical and Theoretical Course, and Illustrated Handbook to :—

THE CENTRAL AIRCRAFT COMPANY,
179, High Road, Kilburn, London, England.
'Phone : Hampstead 4403, 4404. *Cables : Aviduction, London.*

small quantities of mails and cargo, and for police and patrol duties. It also makes an ideal training machine.

It is a pusher biplane fitted with one 270-h.p. Rolls-Royce "Falcon" engine.

The hull construction and lines are similar to the "G.5" already described.

The super-structure calls for no particular comment, apart from the centre section.

As with the "G.5," the top centre plane is quickly removable without disturbing the main planes, thus rendering the engine very accessible.

Otherwise, the machine is of very robust construction, and has a factor of loading of six throughout.

THE GOSPORT "G.8A."

The "G.8a," with exception of super-structure and engine, is identical with the "G.8." It was produced to fulfil the demand for a small fast flying-boat.

It may be fitted with either a 360-h.p. Rolls-Royce "Eagle VIII" engine, or a Napier "Lion," or a Cosmos "Jupiter."

THE GOSPORT "G.9."

This flying-boat was designed primarily to carry mails and valuable cargo long distances over the sea.

It is a triplane, and fitted with three 600-h.p. Rolls-Royce "Condor" engines, or two 1,000-h.p. Cosmos "Hercules" engines.

The general design is similar to the "G.5," and is designed to a factor of loading of four throughout.

PARTICULARS OF GOSPORT FLYING BOATS.

	G5.	G5A.	G8.	G8A.	G9.
Area of Main Planes	1,410 sq. ft.	1,440 sq. ft.	910 sq. ft.	700 sq. ft.	3,180 sq. ft.
Area of Tail Plane & Elevators	178 sq. ft.	190 sq. ft.	109 sq. ft.	109 sq. ft.	378 sq. ft.
Area of Fin	41 sq. ft.	33 sq. ft.	21 sq. ft.	21 sq. ft.	86 sq. ft.
Area of Rudder	33 sq. ft.	33 sq. ft.	20 sq. ft.	20 sq. ft.	58 sq. ft.
Span of Upper Plane	103 ft.	97 ft. 6 ins.	79 ft.	61 ft.	123 ft.
Span of Lower Plane	74 ft.	65 ft.	51 ft.	40 ft.	(Triplane)
Chord	8 ft.	9 ft.	7 ft. 3 ins.	7 ft. 3 ins.	10 ft.
Gap...	8 ft. 6 ins.	8 ft. 6 ins.	8 ft. 6 ins.	8 ft. 6 ins.	8 ft. 6 ins. & 8 ft. 6 ins.
Weight Fully Loaded	12,500 lbs.	12,500 lbs.	4,850 lbs.	5,250 lbs.	28,800 lbs.
Passengers	6	6	3	3	10
Crew	2	2	1	1	3
Weight of Passengers & Crew	1,440 lbs.	1,440 lbs.	720 lbs.	720 lbs.	2,340 lbs.
Cargo	1,200 lbs.	1,250 lbs.	140 lbs.	270 lbs.	4,000 lbs.
Fuel & Oil...	2,340 lbs.	2,340 lbs.	570 lbs.	660 lbs.	6,500 lbs.
Total Useful Load	4,980 lbs.	5,030 lbs.	1,390 lbs.	1,650 lbs.	12,840 lbs.
Top Speed...	87 knots	88 knots	74 knots	87 knots	95 knots
Cruising Speed	78 knots	78 knots	65 knots	74 knots	80 knots
Landing Speed	45 knots	45 knots	36 knots	45 knots	45 knots
Duration	500 sea miles	500 sea miles	320 sea miles	330 sea miles	900 sea miles
Engines	2 Eagle Rolls-Royce	2 Eagle Rolls-Royce	1 Falcon Rolls-Royce	1 Eagle Rolls-Royce	3 Condor Rolls-Royce

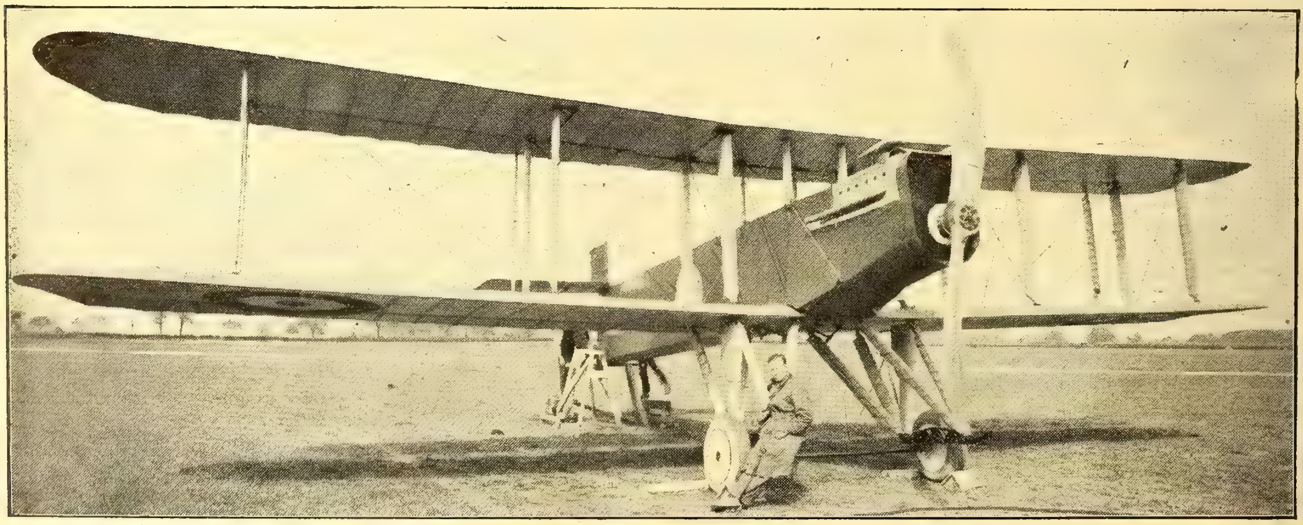
THE BLACKBURN AEROPLANE AND MOTOR CO., LTD.

Mr. Robert Blackburn designed, built, and flew his first machine in 1909—a 28-ft. span monoplane with a 35-h,p. Green engine. Capt. Hucks took his ticket on the second Blackburn machine in February, 1911. Two Blackburn monoplanes took part in the "Circuit of Britain" with Capt. Hucks and Brig.-Gen. Conway Jenkins as pilots. Thereafter Capt. Hucks toured the West Country as a propaganda effort, and with great success. In the winter, 1911, the first all-metal Blackburn was built. The 80 Gnome type of the "West Country" tour was also flown by numerous well-known pre-war pilots, including Lieut.-Col. Blackburn, Mr. Pickles, and Lieut.-Col. Spenser Grey.

In the spring of 1914, the first War Office order was obtained—for B.E.s—and the present company was formed to deal with it. Simultaneously a seaplane (130-h.p. Salmson) was built for the "Round Britain" race.

During the war the Olympia works expanded rapidly to handle War Office contracts for B.Es. and the technical department grew simultaneously to cope with Admiralty experimental work.

An experimental triplane was followed by a series of experimental sea-going machines. The first of these was a twin fuselage all-purposes seaplane with twin 130-h.p. Clergets, and this was followed by the twin "Sunbeam G.P." type, later



Three-quarter Front View of the Blackburn Torpedo-carrying "Blackburd" (350-h.p. "Eagle" Rolls-Royce Engine.)

THE FAIREY AVIATION CO., LTD.,

Contractors to the Admiralty,
War Office and Air Ministry.

Head Office, HAYES, MIDDLESEX.
London Office, 175, PICCADILLY, W.1.
Works, Hayes, Middlesex, and Hamble, near Southampton.

Designers and manufacturers of Seaplanes, Flying Boats and Aeroplanes.

Patentees of the Fairey Patent Variable Camber Gear for Aircraft.

Sole Licensees of the Linton Hope Patent Hull for Flying Boats.

Designers, by special request of the British Government, of the "Atalanta" type Flying Boat, the largest of its kind constructed.

The following types of Fairey Seaplanes designed for the British Government have been put into production for Service use:—Fairey Campania, Hamble Baby—type IIIA, type IIIB, type IIIC.

Telephone—19 Hayes, Middlesex.

Telegrams—"Airily, Hayes, Middlesex."
Code—A.B.C. 5th Edition.

converted to Rolls-Royce "Falcons," and finally developed into the "Kangaroo" land machine, used for long-range anti-submarine patrol work.

A Blackburn "Kangaroo" at the E.L.T.A. Exhibition (Amsterdam).

Parallel with this, a series of experiments on torpedo carriers took place. The production side of the firm was building "Baby" seaplanes, and thence rose the Air Board's request to take over and develop the "Cuckoo" torpedo carrier. This was followed by the "Blackburd," and a further development, the "Kingfisher," was in hand at the time of the armistice, which also found a small flying-boat, the "Nib," well under way.

The end of the war found the firm with a large up-to-date works at Olympia, organised for rapid production and high-grade workmanship; an experimental depot and seaplane base at Brough, near Hull; a highly skilled technical staff with wide design experience, and a large number of skilled workmen. In addition to its reputation for excellent design and construction, the firm had won a name for manufacture of standard fittings and accessories, and an associated company, Blackburn Aircarft Products, had been formed to handle this branch of activity.

Since the war the firm has adopted the definite policy of remaining in the Aircraft Industry, whilst adopting non-aircraft work to employ its surplus facilities. The Olympia works have been diverted to automobile work on a production basis, thus enabling the retention of the high-skilled staff on the aircraft side. The Brough depot has been allocated to experimental aircraft work and the technical staff is fully engaged on the new problems of peace aviation. It is not expected that the aircraft side of the firm can be run at a profit for some while, but it is believed that such work is necessary and will in the long run prove wise, and that without such work the technical and commercial peculiarities of peace flying cannot be properly met. The choice of automobile work as a subsidiary line of business was, it may be stated, guided by the fact that such work enables a continuity of factory organisation and easy re-diversion to aircraft work at need.

Post-War Achievements.

The reorganisation of the Olympia works has naturally occupied a large share of the firm's activities during the past year, but a certain amount of aircraft work has been carried on with success. Conversion for commercial duties has been planned and executed on the "Kangaroo," "G.P." seaplane, and "Blackburd" types. The "Kangaroos" have been flown with much success by the North Sea Aerial and General Transport, Ltd., with whom the Blackburn Aero and Motor Co. have been associated to a considerable extent. This flying will be dealt with below. In addition a "Kangaroo" has been selected by one of the parties competing in the flight to Australia and has up to the present date achieved a distance of 1,300 miles without any defect arising in the machine. A model of the commercial pattern "Kangaroo" will be on exhibition in the Paris Show.

Work in hand at Brough includes among other items a certain amount of experimental construction for the Air Board, some private experimental work of great promise which may very appreciably simplify the "ton-miles per shilling" problem, and the design and construction of a further development of the "Kangaroo" for the use of the Cope Antarctic Expedition.

The work in which the Blackburn Aero Co. have been associated with the North Sea Aerial and General Transport, Ltd., of which the manager is Major Veal, comprises a considerable amount of general flying and two successful passenger-carrying seasons—at Scarboro' and the E.L.T.A., Amsterdam. The bulk of this flying has been made with a small fleet of commercial Kangaroos. One of these machines acted as mail carrier on the London-Glasgow route during the railway strike.

Three of them were at the E.L.T.A., and there carried over 1,000 paying passengers without the least mishap, and received excellent notices for their commercial capabilities. Statistics based on this season at Amsterdam show that the "Kangaroo's" running costs were very reasonable, even for such uneconomical work as "flipping." The North Sea Aerial and General Transport, Ltd., are making arrangements for the institution in the near future of regular services across the North Sea and propose to employ "Kangaroos" for this work.

A schedule of data for present Blackburn models is given below :—

SPECIFICATION OF BLACKBURN AIRCRAFT.

Type.	Kangaroo bomber. Twin engine, 3-seater.	Kangaroo Passenger Carrier. Twin engine. 9-seater.	Kangaroo Mail Carrier. Twin Engine.	Blackburd Torpedoplane Single seater.	Blackburd Commercial type. 3 seater.	Sidecar Passenger Carrier. Tractor monoplane. 2-seater.	'Nib' Sporting Flying Boat. Single seater.	G.P. Seaplane Twin engine, 3-seater.	G.P. Seaplane Passenger Carrier. Twin engine 8-seater.	G.P. Seaplane Twin engine.
Purpose.	Long range bombing & patrol.		Mail carrier.	Torpedo ship aeroplane.	Mail and goods carrier.		Sporting.	Bombing and patrol.		Mail Carrier.
Span open.	74 ft. 10¼ in.	74 ft. 10¼ in.	74 ft. 10¼ in.	52 ft. 6 in.	52 ft. 6 in.	27 ft. 3 in.	34 ft. 10 in.	74 ft. 10¼ in.	74 ft. 10¼ in.	74 ft. 10¼ in.
folded.	27 ft. 9½ in.	27 ft. 9½ in.	27 ft. 9½ in.	17 ft. 0 in.	17 ft. 0 in.			27 ft. 9½ in.	27 ft. 9½ in.	27 ft. 9½ in.
Gap.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 0 in.	7 ft. 0 in.		6 ft. 9 in.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 3 in.
Length, open.	44 ft. 2 in.	44 ft. 2 in.	44 ft. 2 in.	34 ft. 10 in.	34 ft. 10 in.	21 ft. 6 in.	28 ft. 6 in.	44 ft. 2 in.	44 ft. 2 in.	44 ft. 2 in.
,, folded.	46 ft. 0 in.	46 ft. 0 in.	46 ft. 0 in.	34 ft. 10 in.	34 ft. 10 in.			46 ft. 0 in.	46 ft. 0 in.	46 ft. 0 in.
Maximum height.	15 ft. 9 in.	15 ft. 9 in.	15 ft. 9 in.	12 ft. 4½ in.	12 ft. 4½ in.	6 ft. 3 in.	10 ft. 6 in.	16 ft. 10 in.	16 ft. 10 in.	16 ft. 10 in.
Chord.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 0 in.	7 ft. 0 in.	5 ft. 0 in.	5 ft. 6 in.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 3 in.
Wings, Area.	880 sq. ft.	880 sq. ft.	880 sq. ft.	709 sq. ft.	709 sq. ft.	123 sq. ft.	314 sq. ft.	880 sq. ft.	880 sq. ft.	880 sq. ft.
Span, Tail.	17 ft. 6 in.	17 ft. 6 in.	17 ft. 6 in.	17 ft. 0 in.	17 ft. 0 in.	7 ft. 1 in.	11 ft. 0 in.	17 ft. 6 in.	17 ft. 6 in.	17 ft. 6 in.
Area, Tail.	143.5 sq. ft.	143.5 sq. ft.	143.5 sq. ft.	82 sq. oft.	88 sq. ft.	13.2 sq. ft.	51.7 sq. ft.	143.5 sq. ft.	143.5 sq. ft.	143.5 sq. ft.
Area, Elevators.	63.5 sq. ft.	63.5 sq. ft.	6 35 sq. ft.	34 sq. ft.	34 sq. ft.		23.7 sq. ft.	63.5 sq. ft.	63.5 sq. ft.	63.5 sq. ft.
Area, Rudder.	22.5 sq. ft.	22.5 sq. ft.	22.5 sq. ft.	9 sq. ft.	9 sq. ft.	4 sq. ft.	8.75 sq. ft.	22.5 sq. ft.	22.5 sq. ft.	22.5 sq. ft.
Area, Fin.	25 sq. ft.	25 sq. ft.	25 sq. ft.	18 sq. ft.	18 sq. ft.		11.25 sq. ft.	25 sq. ft.	25 sq. ft.	25 sq. ft.
Total area, Aileron.	166.5 sq. ft.	165.5 sq. ft.	166.5 sq. ft.	85 sq. ft.	85 sq. ft.	14 sq. ft.	83 sq. ft.	166.5 sq. ft.	166.5 sq. ft.	166.5 sq. ft.
Engine.	2 x 250 h.p. Falcon, Rolls-Royce.	2 x 250 h.p. Falcon, Rolls-Royce.	2 x 250 h.p. Falcon, Rolls-Royce.	350 h.p. Eagle, Rolls-Royce.	350 h.p. Eagle, Rolls-Royce.	ABC Gnat.	200 h.p Hispano.	2 x 250 h.p. Falcon, Rolls-Royce.	2 x 250 h.p. Falcon, Rolls-Royce.	2 x 250 h.p. Falcon, Rolls-Royce.
Weight empty.	5150 lbs.	5300 lbs.	5150 lbs.	3083 lbs.	3080 lbs.		1503 lbs.	5840 lbs.	5840 lbs.	5840 lbs.
Load per sq. foot.	9.21 lbs.	8.75 lbs.	8.78 lbs.	7.53 lbs.	7.53 lbs.		7.61 lbs.	9.78 lbs.	9.78 lbs.	9.78 lbs.
Weight per H.P.	16.2 lbs.	15.4 lbs.	15.4 lbs.	15.3 lbs.	15.3 lbs		11.95 lbs.	17.2 lbs.	17.2 lbs.	17.2 lbs.
Tank capacity, Hours.	6	5 (cruising).	6	3	6	4	3	4½	5	6
Range, Miles.	580	410	580	276	550	324	342	435	485	580
Top speed.	98 m.p.h.	95 m.p.h.	98 m.p.h.	92 m.p.h.	92 m.p.h.	83 m.p.h.	114 m.p.h.	97 m.p.h.	97 m.p.h.	97 m.p.h.
Landing speed	50 m.p.h.	50 m.p.h.	50 m.p.h.	49 m.p.h.	49 m.p.h.	48 m.p.h.	45 m.p.h.	52 m.p.h.	52 m.p.h.	52 m.p.h.
Getting off speed.	56 m.p.h.	56 m.p.h.	56 m.p.h.	53 m.p.h.	53 m.p.h.	50 m.p.h.		56 m.p.h.	56 m.p.h.	56 m.p.h.
Disposable load.	1710 lbs.	1700 lbs.	1400 lbs.	1680 lbs.	600 lbs.	385 lbs.	470 lbs.	1710 lbs.	1540 lbs.	1300 lbs.
Total weight loaded.	8500 lbs.	8100 lbs.	8100 lbs.	5340 lbs.	5340 lbs.		2390 lbs.	8600 lbs.	8600 lbs.	8600 lbs.

POWER

—an outstanding point in "the most efficient Aero Engine in the world"

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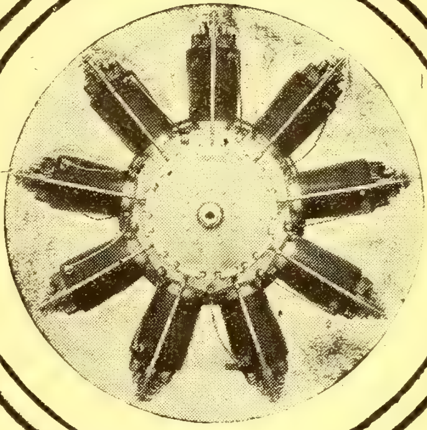

The Engine illustrated is the DRAGONFLY—340 h.p.—9 cyl. (Static Radial).

WALTON MOTORS, Ltd,
Walton-on-Thames.

Telephone:
ESHER 306 and 307.

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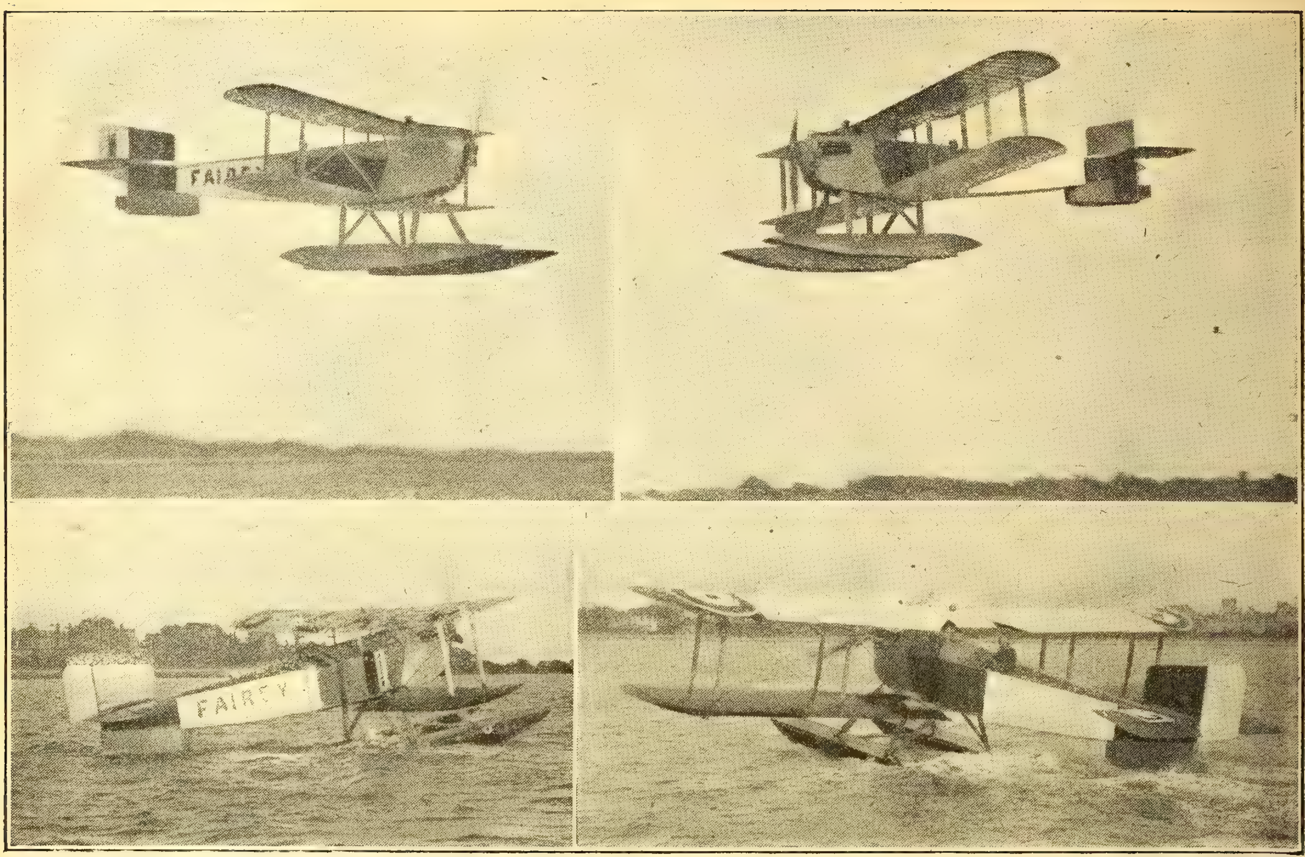
THE FAIREY AVIATION CO., LTD.

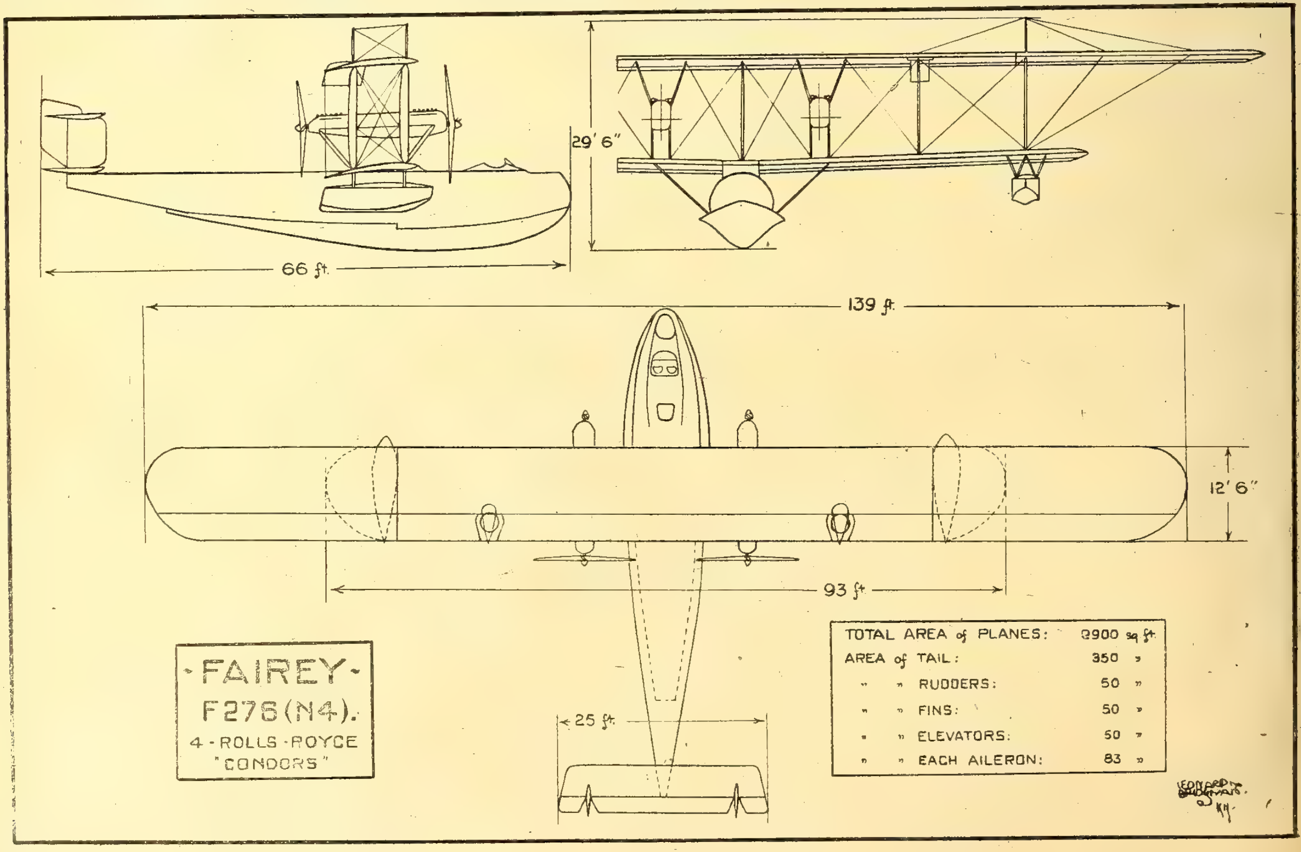


On the Left two Views of the Fairey Machine entered for the Schneider Cup Contest. On the Right the same Machine fitted with the Standard Type 3 Wings. A Napier engine is used.

Founded in 1915 by Mr. C. R. Fairey, the Fairey Aviation Co. have since then shown themselves to be in the front rank of British aircraft constructors.

Generally speaking, the Fairey Company have been associated with the manufacture of seaplanes, but it must not be forgotten that one of their earliest successful designs was the Fairey "Fighter"—one of the first of the large twin engine type of aeroplane to be successfully flown and to perform.

Mr. Fairey's earlier design efforts were more or less designed on "high lift" wing lines, from which position there has been a steady progress with the development of the



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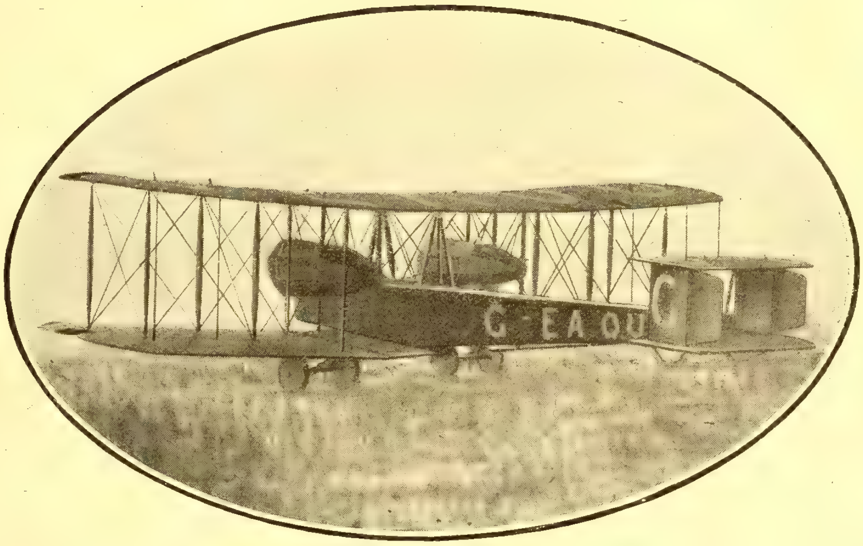


The Start from Hounslow. 9.10 a.m. November 12th, 1919.

The FIRST FLIGHT from ENGLAND to AUSTRALIA
Nov. 12th to Dec. 10th, 1919.
TIME—27 days, 20 hrs. 20 mins. DISTANCE—Approx. 11,500 miles.
THE WORLD'S LONGEST FLIGHT.

The FIRST DIRECT TRANS-ATLANTIC FLIGHT
June 14th—15th, 1919.
TIME—15 hrs. 57 mins. DISTANCE—1,890 miles.
THE WORLD'S LONGEST NON-STOP AEROPLANE FLIGHT.

Telegraphic Address:
Vickerfyta, Knights, London.

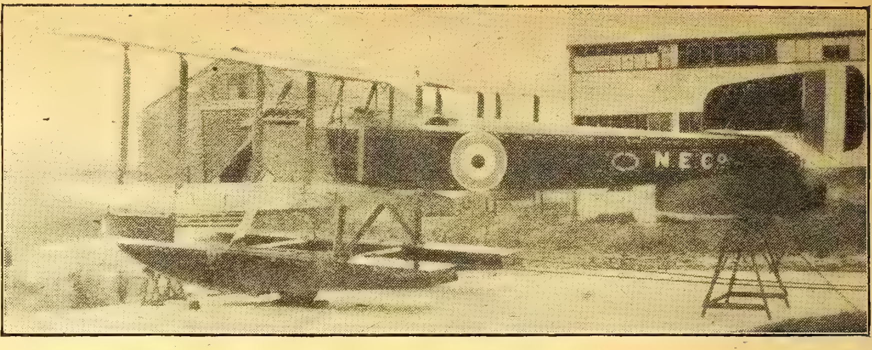
Telephone:
Kensington 6520 (4 lines

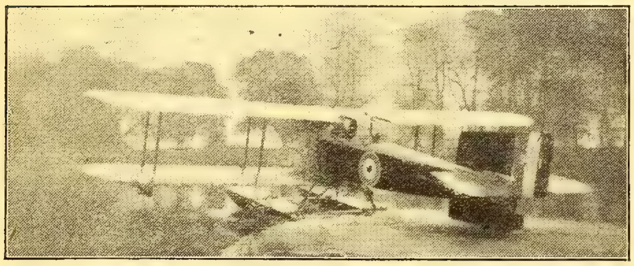
Aviation Department,
IMPERIAL COURT, BASIL ST., KNIGHTSBRIDGE, S.W.3.

Fairey patent variable camber gear, which enables the low landing and high climbing speed of the high lift wing to be used while retaining the high speed of the low resistance type of wing.

The value of this development is shown by the fact that with a standard seaplane of very robust construction, loaded to 11 lb. per sq. ft. and to 15 lb. per h.p., a speed of 112 miles per hour, and a climb to 5,000 ft. in 6½ min. has been reached with a Fairey machine.

The Fairey seaplanes of the two-float type are machines of sturdy build. One of them, N.10 was delivered to the R.N.A.S. in April, 1917, and was repurchased by the Fairey Co., fitted with a Napier engine, and was flown in the Schneider Cup Competition with the original parts, even to the floats.

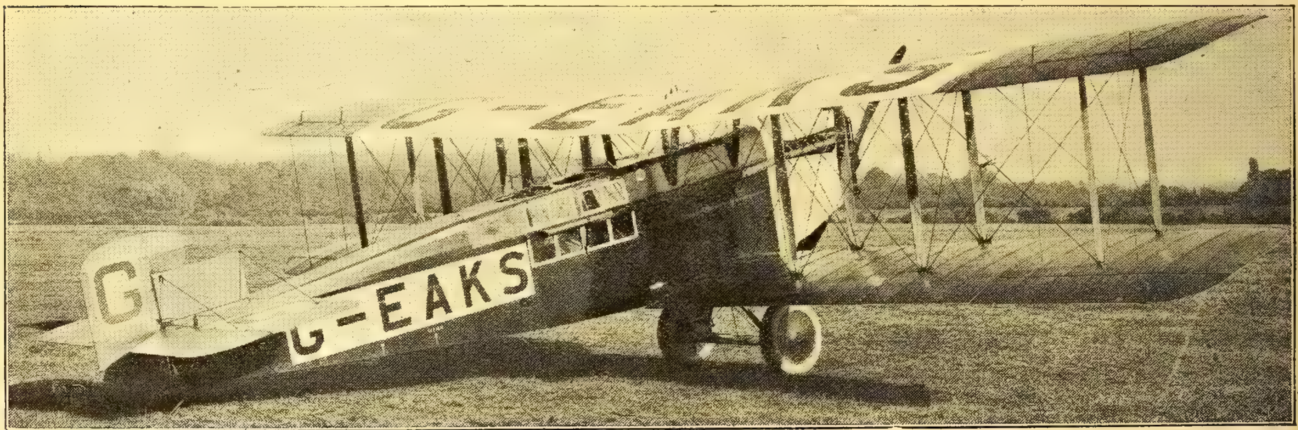

A Standard Fairey Type 3 Seaplane, fitted with an amphibian undercarriage.


A Fairey Seaplane about to get off the Thames at Isleworth.

These seaplanes have been developed on the lines of an interchangeable series—i.e., a standard fuselage may be fitted with any one of certainly three sets of wings, two float undercarriages, and two sizes of float suited to use as a fast two-seater or as a moderate speed load carrier, or either a wheel undercarriage or one fitted with skids and flotation gear for use from ships' decks. Practically all the components of the different wings or undercarriages are interchangeable—with an immense reduction in the number of spares necessary for running machines on different types of service.

Beside the range of machines referred to above, the Fairey Aviation Co. have been responsible for the design of the N4 flying-boat to Royal Air Force specification, intended for work with the fleet at sea. Two of the machines—fitted with four Rolls "Condor" engines of 640 h.p. each—are being built by the English Electrical Company, Ltd., one being ready for the engines, and a third has just been ordered from the Fairey Company.

THE SOPWITH AVIATION AND ENGINEERING CO., LTD.


The Sopwith "Wallaby"—a Special Version of the Transport Type built for the Australian Flight.

The Sopwith Aviation Co. were, during the war, probably responsible for more divers types of aircraft than any other firm. Their experience as that of pioneer designer-constructors covers all types of heavier-than-air craft from flying-boats and seaplanes to land machines.

Furthermore, they have built, and have standardised, everything from bombers and torpedo-carriers to high-speed scouts, and in every type they have attained eminence.

With the passing of the war and the transition to peace the enormous war output of fighting aircraft is no longer required. The Sopwith Co. is by no means disposed to rest on its laurels, and testimony to this effect is furnished by the introduction of three new commercial types of aircraft: the "Dove," the "Gnu," and the "Transport."

Nor is there any reduction of energy in the immediate future. The company's design and experimental department is being maintained at its full strength and is as busy as ever. Some interesting developments are likely to be heard of in the near future.

THE "TRANSPORT."

The "Transport" is an ordinary single-engined tractor biplane and can be adapted for use either as a cargo machine or for the purpose of conveying passengers. In the former case accommodation is provided for one pilot and passenger, with 1,500 lb. of cargo; and in the latter arrangements are made for carrying five passengers and one pilot, four passengers being carried in the centre of the machine and one in the pilot's cockpit, behind the wings.

Petrol is carried for six hours at a cruising speed of 90 miles per hour in the case of the passenger-carrier, and when adapted for use as a cargo machine fuel is provided for eight hours at a cruising speed of 90 miles per hour.

It is of interest to note that the "Transport" is practically identical with the machine upon which the Atlantic Flight was attempted last May, and is also very similar to the "Wallaby" upon which Capt. Matthews started to fly to Australia.

The following particulars are common to both passenger and cargo types :—

Engine	"Eagle 8" Rolls-Royce.
Speed	115 m.p.h.
Weight of machine fully loaded	5,500 lb.
Factor of safety	6.5
Ratio of useful load to total weight	46 p.c.
Span	46 ft. 6 in.
Height	12 ft.
Overall length	28 ft.
Chord	6 ft. 3 in.
Stagger	3 in.
Area of main planes	547 sq. ft.
Dihedral	2½ deg.

HIGHLY IMPORTANT SALE

OF

SURPLUS MATERIALS AND STORES

AT

MESSRS. MORGAN & CO.'S WORKS at LEIGHTON BUZZARD,

to provide the necessary accommodation for the

Mass Production of the New Patent Construction All-Metal Motor Bodies.

HENRY BUTCHER & Co., F.A.I.,

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On JANUARY 14th, 15th, 16th, 1920,

THE EXTENSIVE VALUABLE AND NEARLY NEW

SURPLUS PLANT, STORES,

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COMPRISING

TIMBER SECTION

About 100 STANDARDS OREGON PINE. 5,000 THREE-PLY BOARDS of Extra Aircraft Quality, ⅛ in. to ¼ in., passed A.I.D. 50 STANDARDS ENGLISH ASH. 500 cubic feet WALNUT, MAHOGANY PANELS. Several Hundred TRESTLES, BENCHES, RACKS, CASES, and large quantities of Useful TIMBER.

MACHINE TOOL SECTION

14 Sensitive, Bench, and other DRILLING MACHINES, by Burton Griffiths, Monninger, Churchill, Baines, and others. 4 TOOL GRINDING MACHINES, by Lindley, Holbrook, Goodall, Platt and others. 1 TWIST DRILL GRINDING MACHINE, 1 UNIVERSAL ditto. BUFFING MACHINE, by Canning. 10 S.S. and S.C., CAPSTAN, TURRET, and other LATHES, by Holbrook and others. 1 AUTOMATIC, by Flather. 2 SHAPING MACHINES, 2 POWER HACKSAWS, 2 PUNCHING and SHEARING MACHINES, 1 WOOD BORING ditto. NIBBLING MACHINE, by Burton Griffiths. COKE BREAKING MACHINE, CENTERING MACHINE. C.I. POWER FRAME. MILLING MACHINE, by Holbrook. 1 R.A.F. WIRE ROLLING MILL, by Herring and Son. 1 BAND SAW for METAL. HARVEY FROST VULCANISER. SINGER'S SEWING MACHINE.

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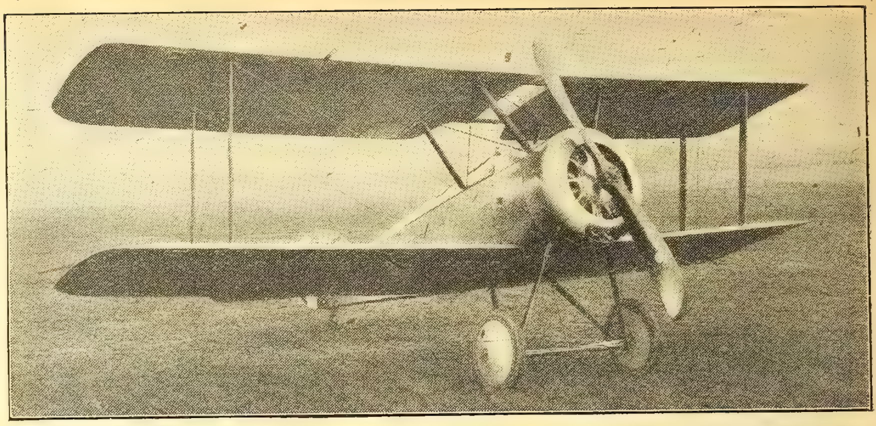
THE "DOVE."

The "Dove" is a two-seater version of the famous "Pup," one of the most delightful of Service machines as far as ease of flying is concerned.

Generally speaking, all dimensions are practically the same in both machines. In the "Dove" the span is cut down by 1½ ft. and the overall length is increased by a few inches.

This machine produced as a sporting two-seater should prove a great favourite for general utility and stunt flying.

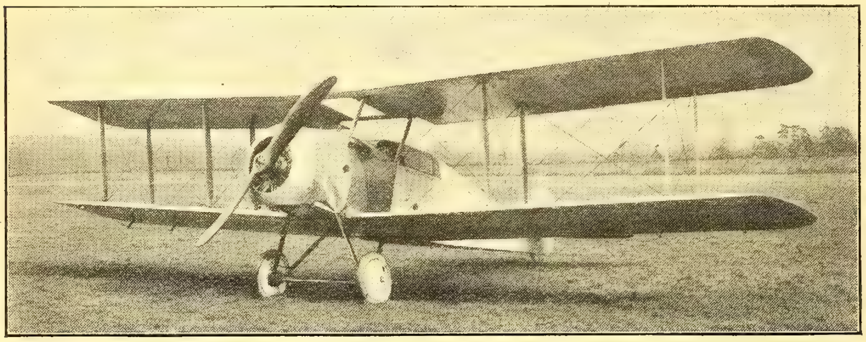


The Sopwith two-seater "Dove" (80 Le Rhône engine).

Specification.

Purpose	Sporting two-seater.
Engine	80-h.p. Le Rhône.
Speed	100 m.p.h.
Speed variation	60 m.p.h.
Climb	5,000 ft. in 7½ min.
Range	Full throttle, 200 miles, cruising speed, 250 miles.
Maximum safe load	665 lb. (normal load, 365 lb.).
Weight of machine fully loaded	1,430 lb.
Factor of safety	6
Ratio of useful load to total weight	27.6 p.c.
Span	25 ft.
Height	9 ft. 6 in.
Overall length	19 ft. 6 in.
Chord	5 ft. 1½ in.
Gap	4 ft. 6 in.
Stagger	1 ft. 4 in.
Dihedral	3 deg. (both planes).
Loading	6.7 lb. per sq. ft.

THE "GNU."



The Sopwith "Gnu," enclosed three-seater (B.R.2 engine).

The "Gnu" is a larger version of the "Dove" and is furnished with enclosed accommodation for the two passengers who are carried in rear of the main planes. The pilot is situated well forward under the centre section which is provided with a large opening for easy ingress and egress to the pilot's cockpit. Two sets of struts are fitted either side of the fuselage.

The construction and general arrangement of the machine is on normal and accepted lines. Either a 200-h.p. B.R.2 or an 110-h.p. Le Rhône engine can be fitted.

Specification.

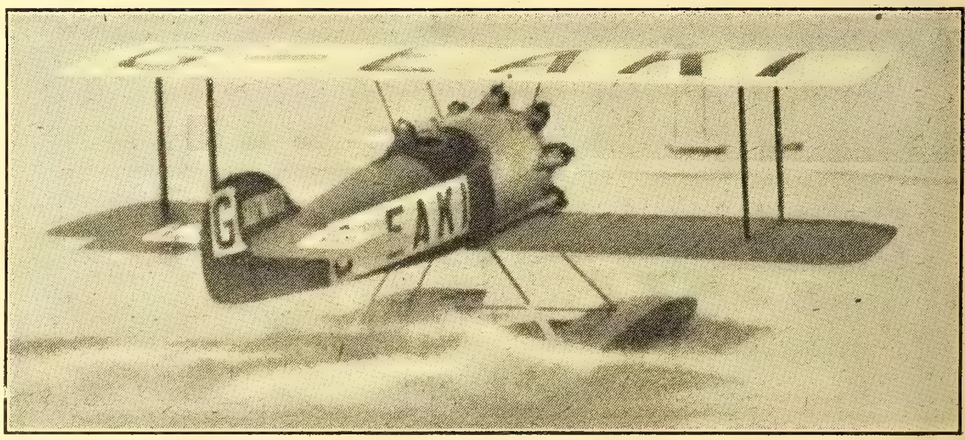
Purpose	Light high-performance goods or passenger machine.
Engine	200-h.p. Bentley rotary.
Speed	110 m.p.h.
Speed variation	65 m.p.h.
Climb—	5,000 ft. in 5½ min.
Range	Full throttle, 200 miles; cruising speed, 250 miles.
Maximum safe load	820 lb.
Weight of machine fully loaded	2,400 lb.
Factor of safety	6
Ratio of useful load to total weight	34.1 p.c.
Span	38 ft.
Height	10 ft.
Overall length	25 ft. 6 in.
Chord	5 ft. 6 in.
Gap	5 ft.
Stagger	11 in.
Dihedral	Both planes 2½ deg.
Loading	6.85 lb.

Specification (with 110-h.p. Le Rhone).

Purpose	light high-performance goods or passenger machine.
Engine	110 h.p. Le Rhône.
Speed	93 m.p.h.
Speed variation	53 m.p.h.
Climb	5,000 ft. in 7¾ min.
Range	full throttle, 220 miles; cruising speed, 300 miles.
Maximum safe load	1,202 lb. (normal load, 845 lb.)
Weight of machine fully loaded	2,160 lb.
Factor of safety	6
Ratio of useful load to total weight	39.1 p.c.
Loading	6.1 lb. per sq. ft.

The Schneider Cup Machine.

The following are particulars of the machine built by the Sopwith Aviation Co. for this year's Schneider Cup competition, and which has now been fitted with a land undercarriage of the customary type:—



The Sopwith Schneider Cup Seaplane (450-h.p. "Jupiter" Cosmos engine).

Engine	Cosmos "Mercury," 450 h.p.
Chord	5 ft. 1½ in.
Span	24 ft.
Gap	4 ft. 6 in.
Total length over floats	22 ft.
Backward stagger	2½ in.
Floats	Plain longitudinal without step.
Estimated speed (as a land machine)	170-175 m.p.h.
Weight	Approx. 2,200 lb.

It is believed that the above machine will prove to be the fastest in the world when "tried out" as a land machine.

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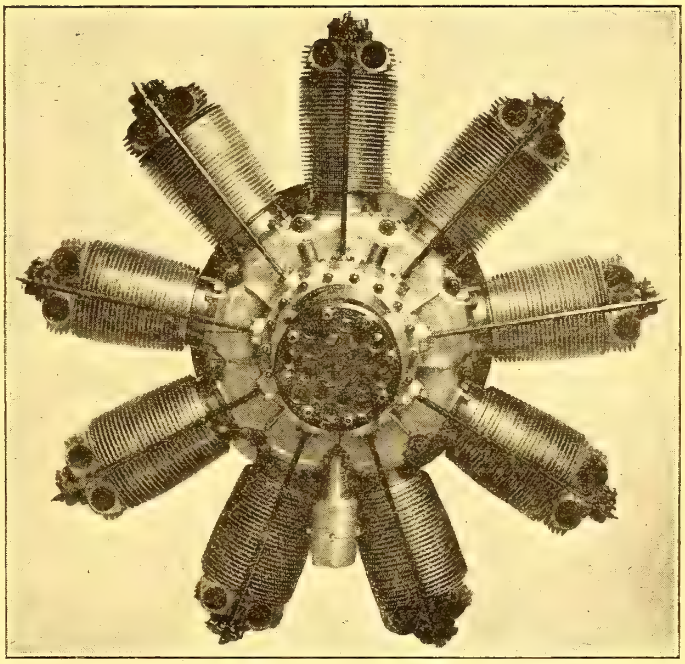

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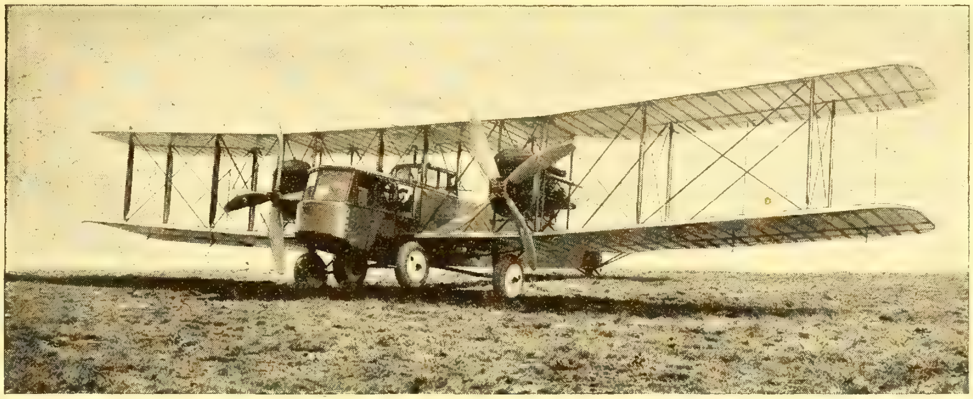

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THIS machine, which can be seen in flight at the London Aerodrome, Hendon, has been designed specially for pleasure and commerce. It is not an adapted War machine, but is a specially constructed Limousine, fitted with two Rolls-Royce engines, luxuriously upholstered, and containing an electrically heated carpet. There is ample accommodation for 4 passengers. The pilot, with whom communication is maintained by speaking-tube, sits in a separate compartment above, and at the rear of, the passengers' quarters.

There is also the Grahame-White—Rolls-Royce Aero Limousine (9 seater), which is of the same construction as the 5-seater, with slight variations. The front cabin has been enlarged to take 6 passengers and the pilot. Moved farther back, between the pilot and planes, a special cabin has been placed to afford comfortable accommodation for 2 additional passengers or luggage.

For those requiring a sporting machine there is the Grahame-White Bantam Single-seater, fitted with 80 h.p. Le Rhone Engine. Speed 100 miles per hour.

Illustrated catalogues and further information regarding the above and other types of machines may be obtained upon application to:

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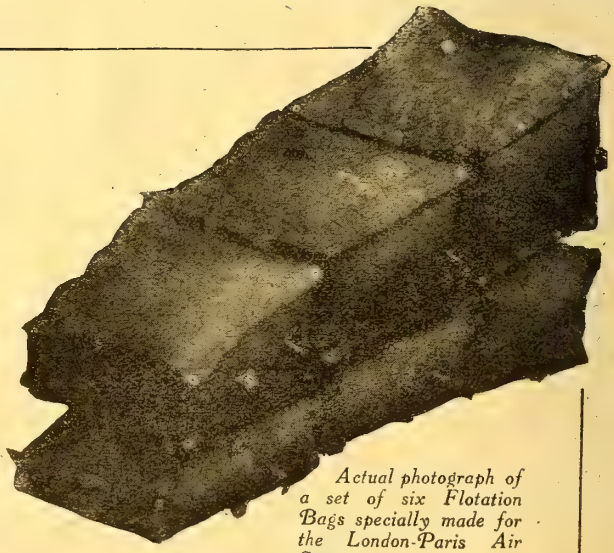

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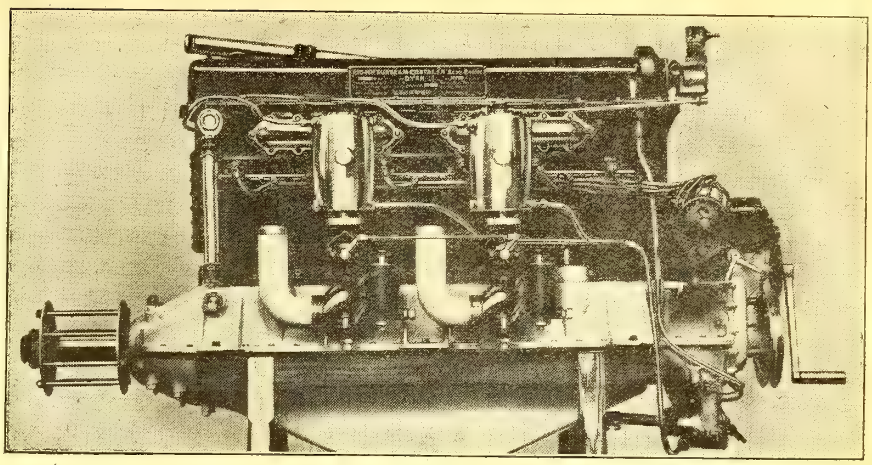
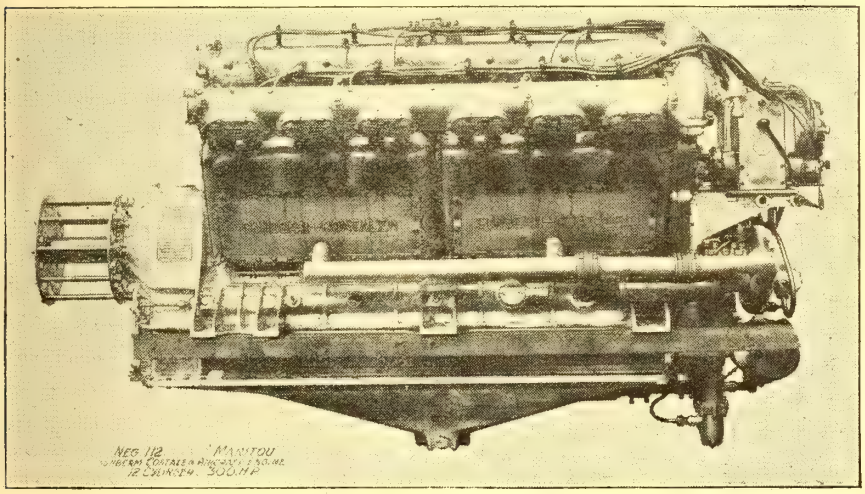
THE SUNBEAM MOTOR CAR CO., LTD.

The four engines to be exhibited by the Sunbeam Company at the Paris Show have many similar characteristics, but differ in important details other than those of size and power. To take the first of all those points in which the engines are similar will perhaps be the best plan. The four engines in question bear the usual tribal names of Sunbeam-Coatalen aircraft engines and are of the following range of horse-power :

"Dyak"	100 h.p.
"Manitou"	300 h.p.
"Matabele"	420 h.p.
"Sikh"	800 h.p.

All these engines are composed of similar materials for similar parts, with one exception, which will be noted later. The crankshafts are of nickel chrome steel, the pistons being of aluminium. The valves are of high chrome steel, of a special form and designed to withstand heat and prevent distortion, and the valve gearing is of self-hardened nickel chrome steel. The cylinder blocks, with the exception of the "Sikh" engine, are of aluminium casting with very large water circulation spaces and inspection covers. The cylinders are fitted with steel liners and the valve seats are of bronze. In the case of the "Sikh" engine, however, the cylinders are composed of steel throughout, and are welded together with their jackets.


The Sunbeam "Dyak" Engine (100 h.p.)



The Sunbeam "Manitou" Engine (300 h.p.)

The crankcases are in each case of aluminium casting and are of a patent form, designed to give greater strength and to allow the bearing caps to take a large share of the side load imposed on the crankshaft under the usual working stresses.

All these engines are of the water-cooled type, the circulation being in each case by centrifugal pump designed to give a specially large output Lubrication in all types is by gear wheel pumps, three of these being employed :—

(a) A scavenger pump which draws the oil from the sump and returns it to the oil tank;

(b) The main force pump which forces oil through the drilled crankshafts and ducts in the crankwebs to the main bearings, drawing direct from the oil tank;

(c) The auxiliary oil circuit pump which forms a portion of the main force pump and is arranged to deliver the necessary quantity of oil at a very low pressure to the camshaft bearings and all auxiliary bearings.

Carburation is effected by Claudel-Hobson carburetters of diffuser type working under a head of pressure of 4 lb. per square inch.

Ignition is by high tension magnetos, and particulars as to the number of these are given in the details of each engine. The magneto drive is by a coupling formed of laminated spring blades giving great flexibility and ensuring a long life for the magneto.

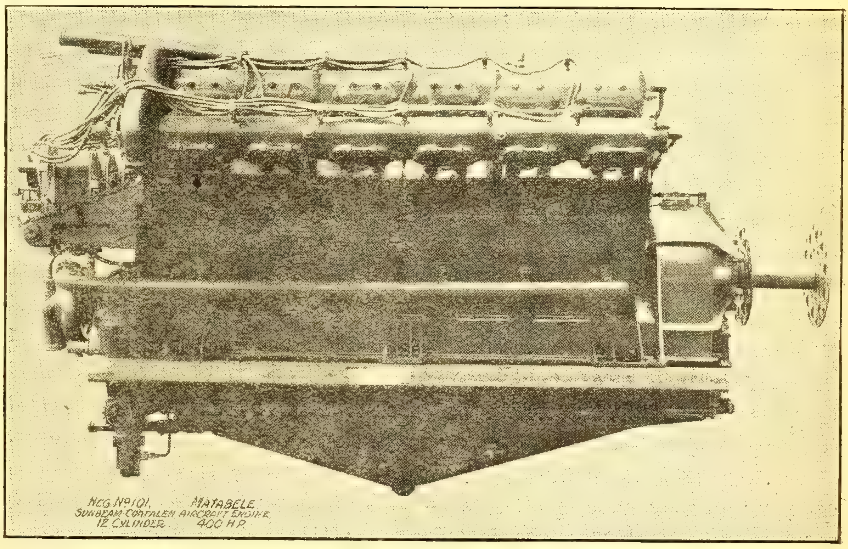
The "Dyak," "Manitou" and "Matabele" engines are each fitted with two sparking plugs per cylinder, the "Sikh" engine being fitted with four plugs per cylinder.

THE 100-H.P. "DYAK."

In the case of the "Dyak" 100 h.p. the engine is of the vertical type, the six cylinders being cast *en bloc* in aluminium, this casting being made in the Sunbeam company's own foundry and being one of the largest, if not the largest, yet made in this material. There are two valves to each cylinder, operated by one overhead camshaft, which is driven direct by bevel gearing to the crankshaft. This is carried on seven die cast white metal bearings, and drives the propeller direct, the thrust bearing being mounted on an extension of the crankcase. The carburetter is of the B.Z.S. 38 type, and is arranged for gravity feed. The starting of this engine is effected by hand.

The chief dimensions are as follows—

Bore	120 mm.
Stroke	130 mm.
Total stroke volume of cylinders	8,820.5 cc.
Normal speed of engine	1,200 r.p.m.
Fuel consumption	0.54 pint per b.h.p. hour
Weight of engine "dry"	399 lb.



The Sunbeam "Matabele" Engine (400 h.p.)

THE 300-h.p. "MANITOU."

The "Manitou" 300 h.p. is a 12-cylinder engine, the cylinders being cast in blocks of three and disposed on the crankcase in two rows of six each, the angle of inclination being 60 degrees. There are two inlets and two exhaust valves actuated by overhead camshafts, these being driven by trains of gears from the crankshaft. The connecting rods are of the usual "H" section and of the articulated pattern. The hollow crankshaft is carried on eight die cast white metal bearings, and the propeller is driven indirectly by gearing to the propeller shaft, which, with the thrust bearing, is mounted on an extension of the crankcase cast on the engine.

Carburation is by two Claudel-Hobson H.C.7 carburetters arranged for gravity feed and set in the centre of the "Vee." The magnetos employed are two of the B.T.H. A.V.12 type, driven from the trains of gears at one and a half times engine speed. Both electric and hand starters are fitted to this engine.

The chief dimensions are as follows :

Bore	110 mm.
Stroke	135 mm.
Total stroke volume	15,395 cc.
Normal speed of engine	2,000 r.p.m.
Fuel consumption	0.54 pint per b.h.p. hour
Ratio of reduction	1.57 to 1
Weight of engine "dry"	845 lb.

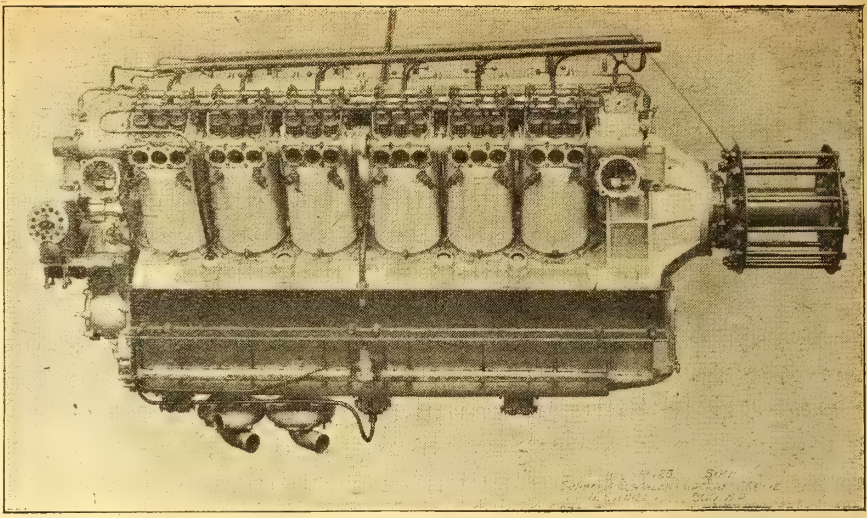
THE 400-h.p. "MATABELE."

The "Matabele" 400 h.p. engine is similar to the "Manitou" with regard to the general lay out, the cylinders being similarly cast and disposed on the crankcase. The valves are likewise four in number (two inlet and two exhaust), and the valve gearing is exactly similar to that of the above-mentioned engine.

The propeller drive is indirect, the gear reduction, ratio being in this case 1.63 to 1. Carburation is by means of two Claudel Hobson H.C.7 (twin type) carburetters arranged for gravity feed, and ignition is effected by means of four P.M.6 magnetos driven from the trains of gears. In this engine the starting is either by compressed air or by the hand starter.

The chief dimensions are :—

Bore	122 mm.
Stroke	160 mm.
Total stroke volume	22,429 cc.
Normal revolutions	2,000 r.p.m.
Fuel consumption	0.54 pint per b.h.p. hour
Weight of engine "dry"	1,000 lb.



The Sunbeam "Sikh" (800 h.p.)

THE 800-h.p. "SIKH."

The "Sikh" engine differs considerably from the other three. It has twelve separate steel cylinders, machined all over, and welded together with their jackets, the disposition on the crankcase being the same as in the smaller twelve-cylinder types. There are three inlet and three exhaust valves to each cylinder.

The valves are operated by push rods and rockers, actuated by a single central camshaft, driven, as usual, from the trains of gears. Eight die cast white metal bearings carry the hollow crankshaft, and the propeller shaft is driven indirectly by spur gear, the thrust bearing being mounted on an extension of the crankcase cast on the engine.

Carburation is effected by means of four Sunbeam Claudel carburetters of special form, two being situated at each end of the engine. Ignition is by four twelve-cylinder magnetos driven by skew gear and fitted with Vernier type coupling to allow of fine adjustment. Both hand and electric starters are fitted to this engine.

The chief dimensions are as follows :—

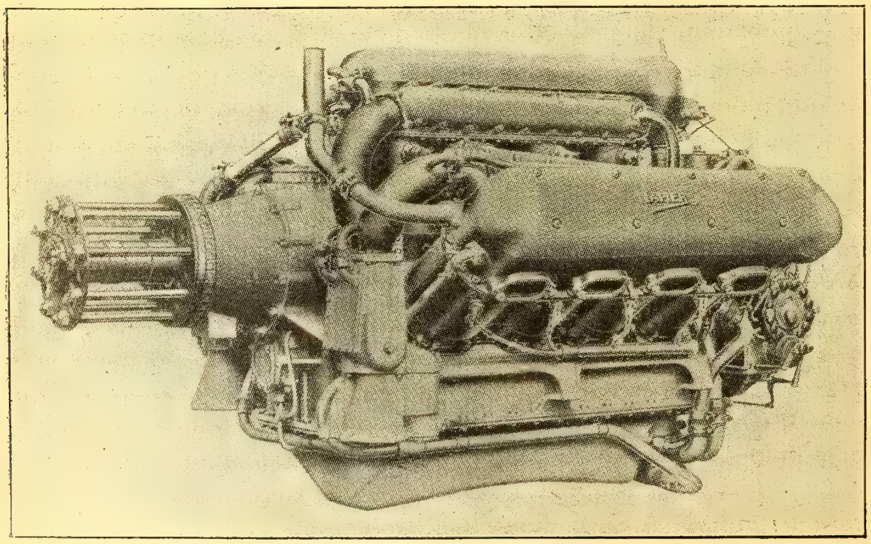
Bore	180 mm.
Stroke	210 mm.
Total stroke volume	64,113.6 cc.
Normal speed of engine	1,400 r.p.m.
Fuel consumption	0.51 pint per b.h.p. hour
Ratio of reduction	1.526 to 1
Weight of engine "dry"	1,952 lb.

D. NAPIER AND SON, LTD.

The Napier aero engine made its appearance too late in the history of the war to have any effect on the war in the air—though this fact was in no sense the fault of the designing firm, but was rather due to the operations of those in authority over aircraft engine production.

Since peace has allowed it to display its capacity, it has shown itself to be in the very front rank of the world's aircraft power plants, and it will doubtless play an important part in the development of commercial aviation. It has already to its credit many very fine performances, Capt. Lang's well-known ascent with a passenger to some height not yet officially certified, but in the neighbourhood of 30,000 ft., the winning of the Aerial Derby, the establishment of 18 British speed records in one day are amongst them.

As is probably well known by this time, the engine is a three-row, broad arrow type, with 12 cylinders, giving 450 h.p. at 2,000 r.p.m., a speed which is brought down to 1,320 r.p.m. at the airscrew shaft by a reduction gear. The cylinders, each 5½ in. bore by 5⅛ in. stroke, are steel forgings, machined all over, with sheet steel water jackets attached thereto. The cylinder heads are of aluminium, the four heads of each row being cast in one piece, carrying valve seatings and the supports for the overhead camshafts, of which there are two—one for inlet valves and one for exhaust valves—to each row of cylinders.



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ENGINEERS, LONDON.

GWYNNE, LONDON." "HAMMERSMITH 1910."

The pistons are of aluminium alloy and are fitted with two gas rings and one scraper ring.

The connecting rods are machined from special high grade steel. The master rods are coupled to the pistons of the vertical block of cylinders, and have lugs on either side to which are attached the auxiliary rods from the right and left blocks of cylinders.

The crankshaft is machined from a solid steel forging, and has the four throws in one plane. It is carried in five roller bearings with one large plain bearing at the forward end.

The propeller shaft is carried on two roller bearings and is fitted with a large double thrust ball bearing.

The crankcase is of aluminium and carries at its front end the reduction gear for the propeller shaft, together with the shaft and its bearings.

To the rear is bolted the case containing the two scavenger oil pumps, the pressure oil pump, the camshaft drive, and the drive for the magnetos, water and oil pumps.

A twin and a single carburetter on the Napier system are fitted. The gas inlet pipes are of steel and are water-jacketed. Altitude control cocks are fitted and an arrangement is provided to secure equal distribution of the gas to the three cylinder blocks.

Lubrication is by pressure throughout, and an adjustable pressure relief valve and a pressure gauge are incorporated in the system.

The Napier patent air-petrol starter is provided by which explosive mixture is pumped into the cylinders and ignited by a hand-starting magneto operated through the special distributor rotors of the engine magnetos. The starter comprises a hand-operated air pump, petrol vaporiser, air distributing cock, and a simple mechanism for opening the valves on each block of cylinders by hand.

THE BEARDMORE AERO ENGINE, LTD.

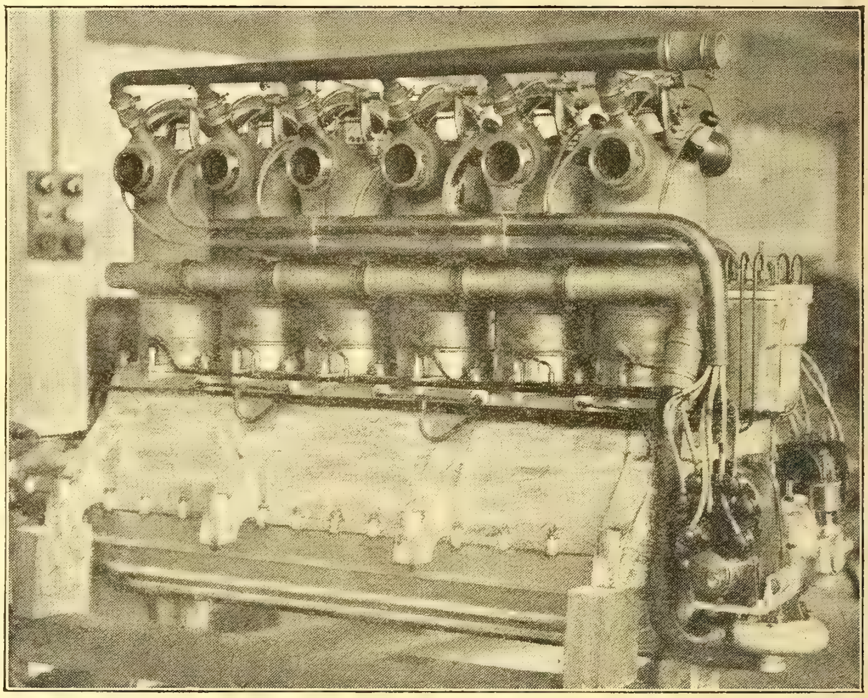
The 160-h.p. Beardmore aero engine gained for itself a deservedly great reputation during the war for its extreme reliability, a reputation to which it has distinctly added since Civil Aviation has once more come into being.

It is, therefore, comforting to know that the Beardmore Aero Engine, Ltd., are in a position to offer immediate delivery of this type of engine, which now develops over 200 h.p., and to supply spare parts for it. All such engines are sold with a guarantee which ensures to the purchaser that the manufacturers will continue to take a direct interest in the engine after the sale and at prices and upon terms which will be found extremely attractive by all aircraft manufacturers who need a reliable engine for commercial machines.

The Beardmore 160-h.p. aero engine is of the six-cylinder vertical type, water-cooled, with overhead valves, push-rod operated.

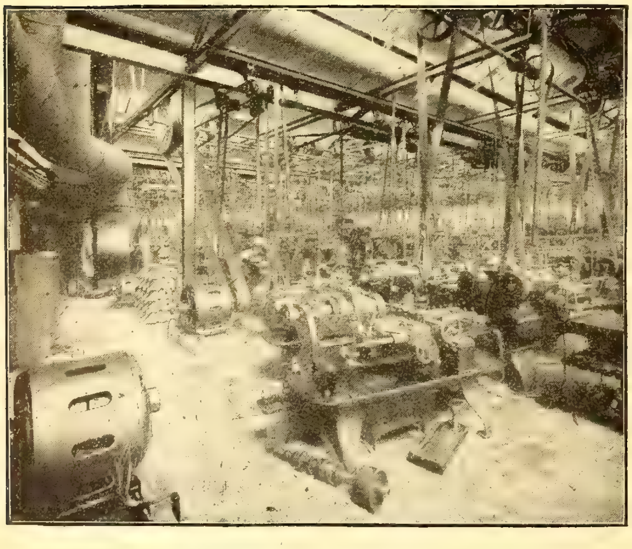
The main dimensions and particulars thereof are :—

Bore, 142 mm.
Stroke, 175 m.
Normal r.p m., 1,280.
Weight complete, dry, 600 lb.



The 160-h.p. Beardmore Aero Engine.

ELECTRICAL EQUIPMENT FOR AIRCRAFT FACTORIES.



G.E.C. Motors Driving Machine Tools in a Manchester Aero-engine Factory.

Manchester is a very busy centre of the Aircraft Industry, and the General Electric Co., Ltd., have secured a considerable number of contracts for driving various factories there. One firm in particular has undertakings which include an important motor car factory, considerably extended to accommodate the manufacture of aero-engines, and further, a new aeroplane factory which ranks as one of the largest in this country. The complete equipment for these works has been supplied by the G.E.C. and can be taken as an example of the best practice in electric light and power installations. Incidentally the factories have been laid out for working night and day.

The motor car and aero-engine factories are supplied with three-phase power at 6,600 volts, 50 cycles. This power is brought into a sub-station where the G.E.C. have provided three 500 kw. oil-insulated air-cooled transformers. From the low tension side of the transformers three sets of 420 volt cables pass to the G.E.C. main switchboard through isolating switches which enable the board to be made dead when required. The main switchboard comprises twelve enamelled slate panels of which one controls the incoming power to the board : of the remainder, eight are power and two are lighting distributing panels, whilst there is one spare.

From seven of the power panels mentioned lead-covered and armoured "Pirelli-General" paper-insulated cables run to various G.E.C. staggered type Home Office pattern ironclad distribution boards. Vulcanised rubber cables pass from these boards in heavy gauge screwed and welded G.E.C. conduits to

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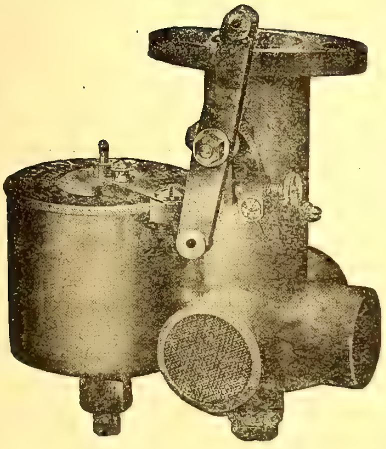


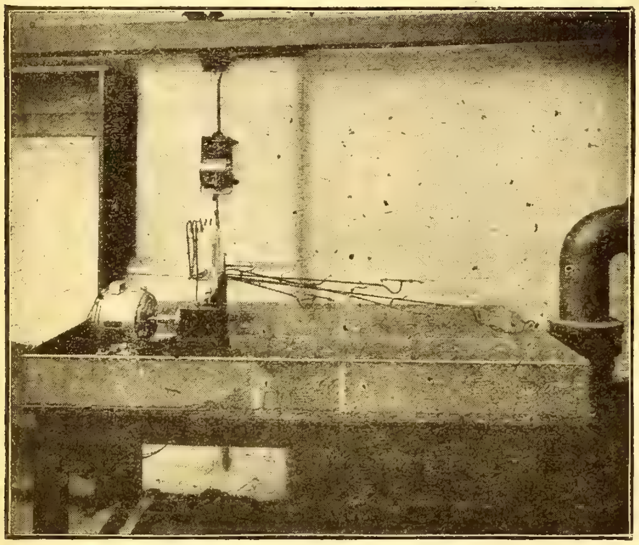
Send for Booklet

ZENITH CARBURETTER COMPANY, LIMITED
40-42, Newman Street, Oxford Street, London, W.1.
Telephone: Regent 4812 - 4813

the various motors. From the eighth power panel cables run to a motor-generator. The function of this motor-generator is to supply continuous current to a number of machines from which adjustable speed is required. These machines include several 4 h.p. adjustable speed "Witton" motors, driving gear quietening machines.

Cables are also taken from the main switchboard to four 45 k.v.a and one 20 k.v.a oil-immersed air-cooled transformers for lighting, as well as to motor-generators of two and three kw. capacity which are utilised for charging ignition and starting batteries for the motor cars, and for providing current for magnetic tables, clutches and similar devices.

The motor-generators mentioned provide a solution of the problem feared by some engineers as to how adjustable speed machines should be run from an alternating current supply.



G.E.C. Electro Motor used for testing the Oil Pumps and Lubricating System of Aero-engines.

Parenthetically it may be said that this problem for large machines can readily be solved by utilising alternating current motors of special design, but for very small outputs it is easy to adopt the solution decided upon in these works, and to put in continuous current machines designed for adjustable speed work, and to supply them from a special motor-generator.

For starting the aero-engines on their test benches a 40 h.p. G.E.C. "Witton" motor has been laid down, driving a line shafting to which the engines can be connected.

The "Witton-Kramer" electric drill has been extensively adopted, there being at present about 50 in use.

The whole of the lighting throughout the works is carried out on the direct system, there being over six hundred 18-inch vitreous enamelled G.E.C. "Munition" reflectors for Osram lamps (Atmos type) of various candle powers, which are supported from the roofs by means of light link chains. In the offices the semi-indirect system of lighting has been selected and 18-inch "Equiluxo" bowls are used for this purpose.

PALMER AERO WHEELS.

The exhibit of the Palmer Tyre, Ltd., at Paris will comprise a full range of Palmer aeroplane landing-wheels and tyres from 300 by 60 mm. to 1,750 by 350 mm., and for the first time a new series of broad-tread tyres will be shown in sizes varying from 700 by 100 mm. to 1,500 by 300 mm.

With the development of cross-country flying in Europe the demand for the latter class of cover to meet the conditions at some of the newer flying-grounds is increasing. More interest is now being taken in France and Italy in the proper fairing of aeroplane landing-wheels, and the type of Palmer wheel shield known as the "Full-streamline" is likely to interest Continental designers. It is well known that the Palmer Tyre, Ltd., supplied the landing-wheel equipment of all British fighting and bombing aeroplanes during the whole course of the war, but it is not so generally known that they also equipped a very considerable proportion of the larger French machines.

English visitors will find that, in conformity with the standardisation scheme of the French Military Aviation Service, most of the larger Palmer wheels are fitted with hubs to suit axles of larger diameter than are usually employed with similar dimensioned tyres on British machines. It is a question whether this standardisation is not being carried a little too far in the direction of the smaller dimensions of the big tyre series in that it tends to make the wheel unduly heavy by comparison with those used on this side for similar duty.

Several types of pneumatic tyre landing-wheels as used on seaplane deck trolleys will also be exhibited.

Many people commented on the absence of the well-known Palmer cord laying machine from the recent Paris Automobile Show. This was due to the contractor responsible for the hoisting of the machine into position in the gallery not allowing any factor of safety in the hoisting tackle, with the result that when an attempt was made to swing the machine clear of the gallery at some 30 ft. from the ground the extra strain caused the lashing of the lifting tackle to snap and the machine was reduced to scrap iron. A duplicate machine, however, is being installed at the Grande Palais and will be in operation demonstrating the construction of Palmer cord aeroplane tyres, and will doubtless prove as attractive as ever.

The recent successful conclusion of the London-Australia Flight will give added interest to the exhibit of the Palmer No. 108 (900 by 200) landing-wheel as used by Capt. Ross Smith and also by Capt. Sir John Alcock on the Vickers "Vimy" that accomplished the Atlantic Flight.

AIRSHIPS, LTD.

Upon the stand of the Aircraft Manufacturing Co. at Paris will be found an exhibit by Messrs. Airships, Ltd., which will include the aeroplane flotation gear upon which this company is specialising, and also a model of one of their small non-rigid airships, or "Aerial Yachts."

M-L MAGNETOS.

It has always been the desire of S. Smith and Sons (M.A.), Ltd., to provide the most complete range of motor accessories, and with this end in view, they recently acquired a controlling interest in the M-L Magneto Syndicate, Ltd., of Coventry, and will handle the distribution and sales arrangements for these magnetos at their London office.

During the war, out of a total of approximately a hundred thousand magnetos produced at Coventry fully a half were taken by the Air Services. These magnetos were required to work under the most exacting conditions, and the experience acquired in meeting these condtions has resulted in the production of M-L commercial models, not only lighter and more efficient than the pre-war models, but also capable of operating at higher speeds and running for longer periods without attention.

The range of post-war magnetos consists of the following models: Type K.1 for single-cylinder motor-cycles of 3½-6 h.p., also single-cylinder stationary or marine engines using petrol, paraffin, or gas.

Types K.2 and K.V. for twin-cylinder engines, either horizontally opposed or Vee-twin up to 60 deg. Type K.-S., for slow speed petrol, paraffin, or gas engines. Types G.3, 4, and 6 for 3-, 4-, and 6-cylinder engines. Types 2F.1, 2B.6, and 2F.6 for aeroplane engines, the first being for rotary engines and the last two suitable for either 6-cylinder in line or 12-cylinder Vee type aero engines.

Ninety per cent. of the magnetos used for the rotary engines fitted in the light fighting scouts were of M-L manufacture, these being of the type P.L.R. The 2F.1 is a slightly modified version of this well-known type, being fitted with spigot fixing instead of base-fixing.

THE BRITISH EMAILLITE CO., LTD.

For post-war aircraft the Emaillite Co., Ltd., have three doping schemes available.

Scheme X gives a covering which is durable in all climates, impervious to heat, cold, rain and snow, is water, oil, petrol and fire-proof, and is claimed to be of the very highest efficiency, and yet one of the cheapest methods of treating aeroplane fabric. In this scheme three to four coats of Emaillite are succeeded by either a pigmented oil varnish, a pigmented nitro covering or a transparent oil varnish.

In addition to the doping materials, identification colours in the form of oil varnishes for use over oil varnish protection, or "nitro" colours for use over the nitro protective coverings, are supplied in red, white, blue, and black.

The Emaillite Co. supply also Emaillite Dope remover, varnish remover, and dope and varnish brush washes, and a whole range of varnishes and enamels suitable for all purposes, as well as the whole series of protective varnishes and enamels for aircraft generally, which are covered by the British Engineering Standards Association Specifications X1, X2, X4, X5, X6, X7, X10, and X11.

The all-white Handley Page machine at the Paris Show is entirely doped on the Emaillite Scheme X, and its appearance gives an excellent idea of the finish which can be secured thereby.

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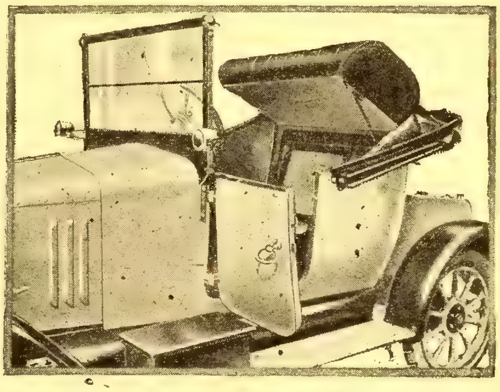
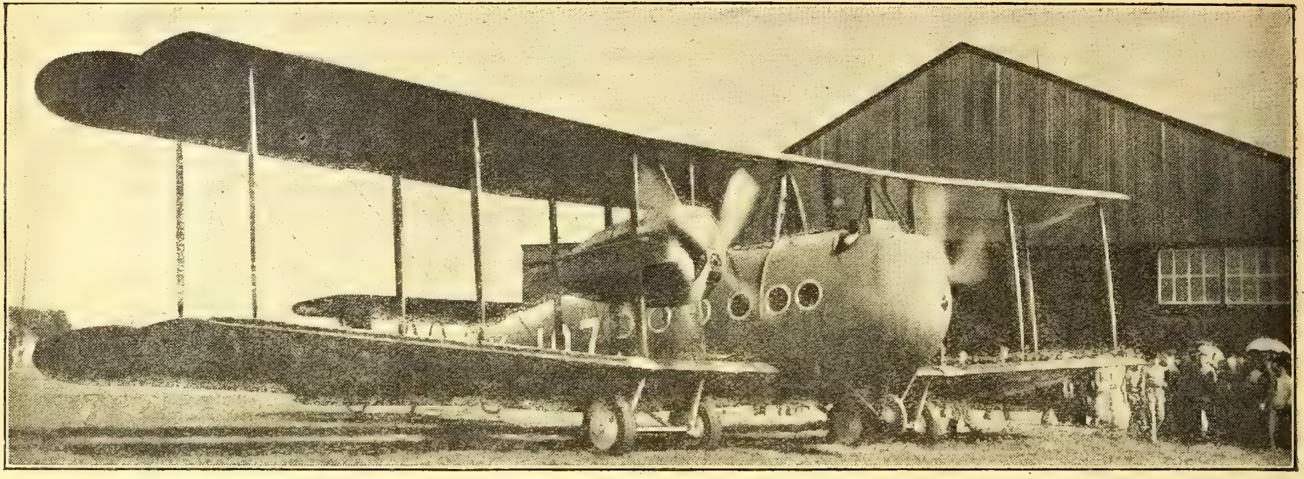


Note the method of packing away the patent side curtains (which open with the door behind the back cushion.

Godbolds R 8.

THE VICKERS COMMERCIAL TYPE "VIMY" MACHINE.



A Commercial Vickers-Vimy at the E.L.T.A., Amsterdam.

This aeroplane is a modification of the Vickers "Vimy" bomber, which is being supplied in great numbers. It is necessary to mention this in order to emphasise:—

(1) That this aeroplane has been flown under stringent war conditions.

(2) The obvious advantage of an aeroplane that can be used either for war or commercial purposes by the rapid interchangeability of the respective fuselages.

It is of interest to note that the fuselages constitute the sole difference between the "Vimy" bomber, and the "Vimy" commercial, and the "Vimy-Rolls" trans-Atlantic aeroplane.

In dealing, then, with the "Vimy" commercial, those who already know the bomber will have a fair idea of its general appearance.

The fuselage is constructed on the "Monocoque" principle, the "shell" of the cabin being attached to oval wooden rings of box section.

These rings are built up of three-ply, are light, and have immense strength. The cover of the cabin is made under the "Consuta" patent, manufactured by S. E. Saunders, Ltd., of Cowes, who are allied with the Vickers Company.

Consuta is constructed of thin layers of selected wood, with the grain placed diagonally, glued and sewn together with rows of stitching running in parallel lines about 1½ in. apart. The strength of this material is very great, it gives a high factor of safety to the whole construction of the cabin, and entirely dispenses with any cross-bracing wires in any direction. The doors in the fuselage are watertight, and the machine will float in a normal position on water.

Two pilots are carried side by side in the cockpit, placed high up in the "nose," giving a wide range of vision, and dual controls are provided throughout.

All the spars are of box section of spruce and three-ply wood bound with fabric; the interplane struts are of hollow spruce, except in the engine bay, where the struts are of round steel tube, reinforced where necessary and fitted with wooden fairings; the ribs are of spruce. The engine mounts are carried on four struts each side, and the chassis is attached below the engine mountings, thus minimising the load in the anti-lift wires.

The after part of the fuselage is of wood and swaged tie rod construction, the longerons being made under Vickers-Ryan patents.

Throughout the machine, streamline steel tie rods are used in external bracing, and round steel rods in all internal bracing; looped wires and ferrules are not used in any important part.

Two Rolls-Royce "Eagle" Mark VIII are installed, giving a total of 750 h.p. Should one engine fail completely, the machine can fly on the other engine alone at a speed of 70 miles per hour.

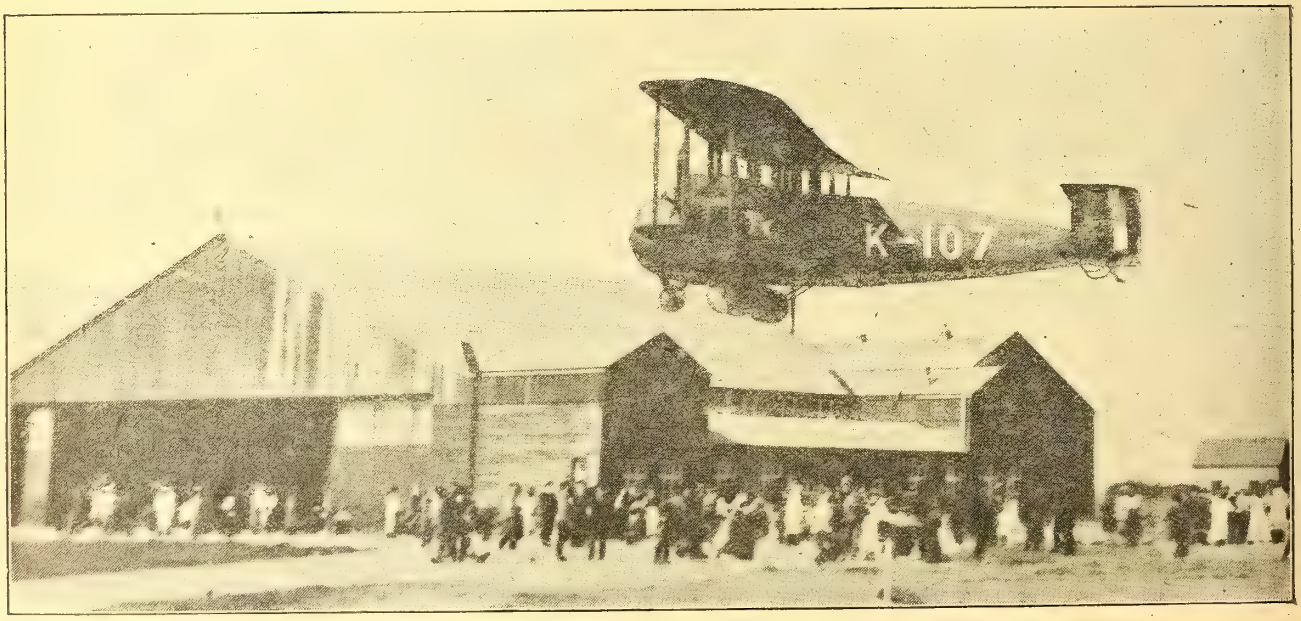
The petrol supply is maintained by fan-driven petrol pumps with regulating valves to maintain a constant flow to a service tank with overflow return to main tanks.

Sufficient petrol is carried for a continuous flight of five hours. Should a greater endurance be required, extra tanks can be fitted.

All flying controls are remarkably light in operation, as balanced control surfaces are used where necessary.

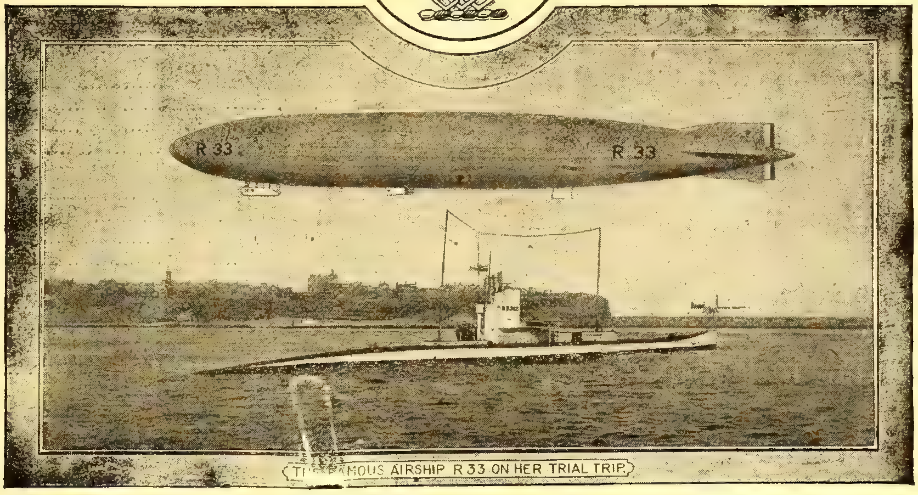
In no part has strength and solidity of construction been sacrificed to lightness, a factor of safety of 4½ being provided throughout the machine.

The cabin is totally enclosed, and has a seating capacity for 10 passengers in separate armchairs. A gangway runs down the centre of the car, and there is ample space between the chairs. Cupboards are provided at the end of the cabin



A Vickers "Vimy" Commercial Machine in the Air at the E.L.T.A. Exhibition.

TRADE MARK



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for the storage of light hand luggage. A separate window is placed at the side of each person, and both height and speed indicators are fitted for those who are interested in the new conditions of travelling. Telephonic conversation can be carried on between the pilot and the passengers, and the ventilation and heating can be adjusted as desired to suit any temperature conditions. Noise has been reduced to a minimum, and vibration entirely abolished.

The seats in the cabin can be detached in a few minutes, giving a floor area of 53 sq. ft., and a volumetric capacity of 300 cub. ft. for freight, which can be kept at an even temperature and dry. The maximum weight which can be carried is 2,500 lb.

When mail-carrying, sorting-boxes are fitted, and the process of sorting can be carried out on similar lines to the arrangements now in operation on the mail trains.

The following table gives the plain particulars of the machine :—

Specification.

Type of machine	Twin-engined tractor biplane.
Name or type No. of machine	Vickers "Vimy."
Purpose for which intended	Commercial.
Span	67 ft.
Gap, maximum and minimum	10 ft.
Overall length	42 ft. 8 in.
Maximum height	15 ft. 3 in.
Chord	10 ft. 6 in.
Total surface of wings	1,330 sq. ft.
Span of tail	16 ft.
Engine type and h.p.	Two 375 h.p. "Eagle" Rolls-Royce.
Weight of machine empty	7,292 lb.
Load per sq. ft.	8.4 lb.
Weight per h.p.	16.4 lb.
Tank capacity in hours	5 hr.
Performance—	
Speed low down	110 m.p.h.
Speed at 6,000 ft.	103 m.p.h.
Speed at 10,000 ft.	99 m.p.h.
Landing speed	45 m.p.h.
Climb—	
To 6,000 ft. in minutes	17 min.
To 10,000 ft. in minutes	48 min.
Disposable load	2,308 lb.
Total weight of machine loaded	11,120 lb.

THE ALLIANCE AEROPLANE CO.

The following descriptive matter has been received from the Alliance Aeroplane Co., Ltd. :—

The Alliance Aeroplane Co., Ltd., of which Sir S. J. Waring is chairman, was formed by Messrs. Waring and Gillow, Ltd., early in the war to carry out their Government aircraft contracts and is, therefore, one of the group of aircraft and aircraft engine firms controlled by Sir Samuel Waring.

In addition to converting their Hammersmith factory into a well-equipped aeroplane works, Messrs. Waring and Gillow acquired the well-known School of Flying Instruction and the large private aerodrome at Acton from Messrs. Ruffy, Arnell, and Baumann Aviation Co., where many hundreds of Service pilots were trained during the war, including such famous men as Capt. Ball, V.C., D.S.O., M.C., etc.

At Acton Aerodrome the final erection and flying tests of the war machines were carried out. Huge hangars were put in hand at Acton, each bay being of the size of 220 ft. by 160 ft., the doors giving a clear opening 160 ft. wide by 40 ft. high. These hangars are now almost completed, and the fact that the firm intends to make use of them as hangars may be taken as some clue to their future policy.

Soon after the Armistice, the Government announcement that no further aircraft contracts would be issued led the firm, in order that their great experience gained under the stress of war-time production might not be wasted, to turn their attention to civil aviation.

To this end the Alliance Aeroplane Company engaged the services of Mr. J. A. Peters, consulting engineer to Messrs. Ruffy, Arnell, and Baumann, and designer of their latest type of fuselage tractor biplane for advanced instruction.

Mr. Peters has been engaged on technical work in connection with aircraft since 1909, and was engaged with several well-known pre-war firms as senior or chief draughtsman on their designing staffs.

The first machine produced was designed for the "owner-driver" for cross-country flying or for use as an aerodrome hack. It can be landed in and taken off from a very small field; it lands at a very low speed and pulls up in 25 yards, while it can get away in 70 yards. The simplicity of its detail renders it cheap to produce and to keep in repair, while its robust construction allows the machine to be stunted and badly landed without any need for constant trueing up. A point of value to owners, particularly those in the Colonies, is that the whole structure consists of ordinary commercial timber, mild steel sheet, cables and hard steel wire, thereby keeping the necessary stock of special materials down to an absolute minimum.

The fuel cost is extremely low (about 3½d. per mile) owing to the installation of an 80 h.p. Renault engine.

The second machine designed by Mr. Peters was the one he intended to pilot in the attempt to fly the Atlantic.

This machine is a biplane fitted with a single 450 h.p. Napier engine, 500 gallons of petrol and 50 gallons of oil giving a range of over 3,000 miles non-stop.

The portion of the fuselage between the wings is entirely filled by the 500 gallon petrol tank.

The crew are stationed in an entirely enclosed cabin, directly aft of the main tank, which, when the windows are closed, cuts out almost all of the engine roar.

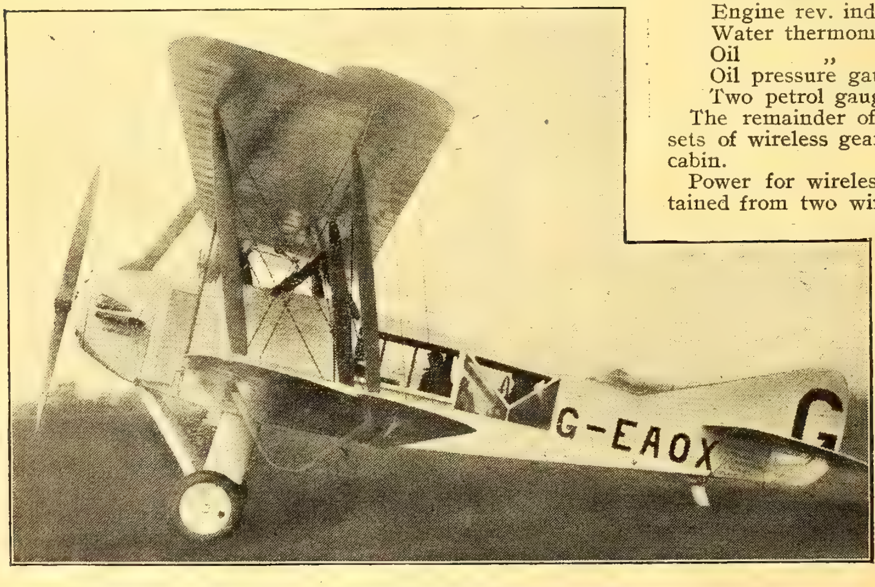
The whole of the front end of the cabin is taken up by the dashboard, which has been described by a member of a well-known instrument firm as the most complete he has ever seen. The attached photograph gives some idea of the many instruments fitted, of which the following is a list :—

- Air speed indicator.
- Air density gauge, for correcting above for height and temperature.
- Altitude indicator.
- Inclinometer.
- Recording air speed indicator, marking the air speed, corrected for height and temperature, on a chart.
- Two compasses.
- Chronometer.
- Engine rev. indicator.
- Water thermometer.
- Oil ,,
- Oil pressure gauges.
- Two petrol gauges.

The remainder of the dashboard is covered with the four sets of wireless gear, which overflow round the sides of the cabin.

Power for wireless, lighting, and battery charging is obtained from two wind-driven generators, one giving 12 volts and the other 1,200 volts. The machine controls consist of a wheel for the pilot, which can be thrown out of gear and tipped forward out of the way during his "watch below," a detachable "stick" for the navigator, and a rudder bar each.

Other contents of the cabin include the pilot's personal kit, fire extinguisher, charts and a chart board for the navigator, and last, but not least, the rations. Sandwiches, acid drops, chewing gum, and chocolate are carried in a locker for the period of flying, while four quart thermos flasks of coffee stand in a rack. For such a flight as the Atlantic, emergency rations were also provided.



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No effort has been spared to provide for all possible contingencies. In the event of any failure of machine or engine necessitating a forced landing, the navigator's first care, if the machine is heavily loaded, is, while the pilot is selecting his landing ground, to empty or partially empty the petrol tank through the large jettison cock. This greatly assists landing on bad ground, and in the case of a forced descent into the sea the empty tank will provide sufficient buoyancy to support the whole machine. Additional flotation is provided by air bags in the rear of the fuselage and by the main planes, which are made air-tight, without the usual eyelets, and are all coupled up to the same air vent cock as the air bags. This, of course, is to prevent the planes from bursting at height due to the variation in density, the cock being only closed when " ditching " is imminent.

A kite is stowed on the top of the fuselage which, by lifting the wireless aerial, enables communication to be established when on the ground or floating on the sea.

The machine has a top speed of 135 m.p.h., a range of 3,000 miles non-stop, a landing speed of under 50 m.p.h., and pulls up in 80 yards on an average aerodrome.

On July 31st Messrs. Peters and Curtis flew this machine to Madrid to inaugurate an inter-communication service between the various houses of Messrs. Waring and Gillow, Ltd. This flight was the first and is so far the only non-stop flight between London and Madrid, being a record flight of approximately 900 miles in 7¾ hours.

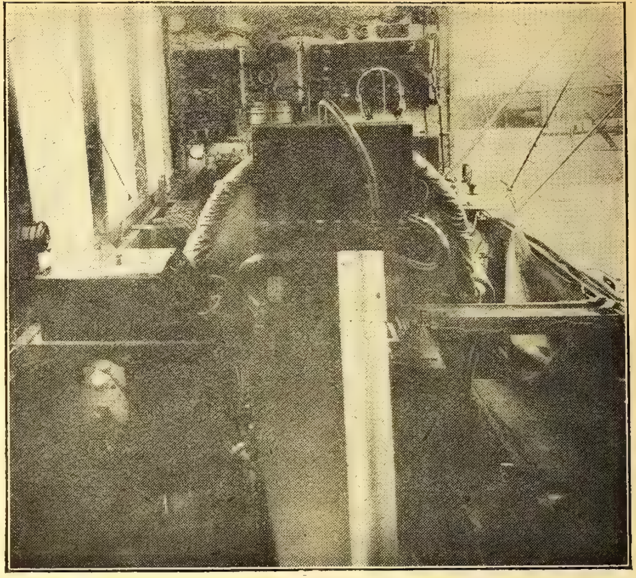
The second machine was almost identical with the first and was intended for the Australian flight.

Lieut. Douglas, M.C., D.C.M., A.F.C., flew the second machine for about fifteen hours and was very emphatic in his statement that it was the finest machine he had ever flown.

Unfortunately, this machine was crashed shortly after starting on the Australian flight and Lieuts. Douglas and Ross were killed.

A modified type of this machine is now in course of construction, with a cabin fitted up to accommodate eight passengers or to carry about a ton of goods or mails. This machine has an oleo undercarriage with a very wide track.

The next machine to be designed was a five-seater biplane fitted with a 200-h.p. Hispano engine and fuel for a flight of 800 miles. The passengers are accommodated in an enclosed cabin between the wings with the pilot immediately behind them in the normal position. The wings are designed to fold so that the machine can be garaged in a small shed and an oleo undercarriage is provided, having a very wide track. With full load this machine has a top speed of 117 m.p.h. and a landing speed of 45 m.p.h. The fuel cost is 4¾d. per mile.



View from the pilot's seat of the Alliance Biplane.

A twin-engine machine is at present being detailed, but it is not proposed to describe this at the moment.

LUKE TURNER AND CO.

An interesting item of the lecture given by Mr. J. D. North on undercarriages at the Royal Aeronautical Society's meeting was a description of an improved type of rubber shock-absorber.

The Luke Turner patent endless shock absorber ring undoubtedly possesses considerable advantages over the shock absorber cord to specification F.16 which was the sole material available to designers during the war.

This ring is constructed in a similar manner to the original cord, but is formed of only one single thread of rubber wound into a coil of the required thickness and diameter, when the beginning and end of the thread are secured by one knot.

The material is then braided with two or more coverings of cotton by a patented process which provides a ring capable of carrying extremely high loads.

Mr. Turner, of Luke Turner and Co., Leicester, the patentees and manufacturers, states that such a ring of ⅞-in. cord section can be supplied which will carry a load of 3,000 lb. at 75 per cent. extension.

He also claims that besides their ease of fitting (which is obvious) and the economy of replacing a single ring instead of a complete length of cord should it become damaged, they offer a decided saving in weight and cost over any other form of shock absorber.

Designers who have felt that some improvement is required upon the somewhat slip-shod and unmechanical war-time method of springing undercarriages with elastic cord would be well advised to get into touch with the manufacturers and inquire into the possibilities of this new patent shock absorber ring, which is already in use upon several of the best known types of machine.

LODGE AERO PLUGS.

As the result of the unique experience gained during the war in the design and construction of the sparking plug for practically every type of aero-engine, the Lodge Sparking Plug Co., Ltd., of Rugby, are concentrating on the production of three post-war aero plugs. Extreme care is taken with the manufacture of these plugs, and, coupled with the stringent tests that are applied during construction, practically guarantees them to stand up to the severe conditions appertaining to aircraft engines. The three types are :—

Type K.R.3 for aero engines, with stationary cylinders, more particularly of the air-cooled type. This pattern has also been used very successfully on racing air-cooled motorcycle engines. Type D.13 for aero engines, with stationary cylinders of the water-cooled type. Type R.F. for aero engines of the rotary type. The plug is as light as possible, consistent with electrical and mechanical strength, and the peculiar type of spark gap has been found to give the best results against the effect of centrifugal force, and the flooding of lubricating oil that is liable to occur.

HENRY HUGHES AND SON, LTD.

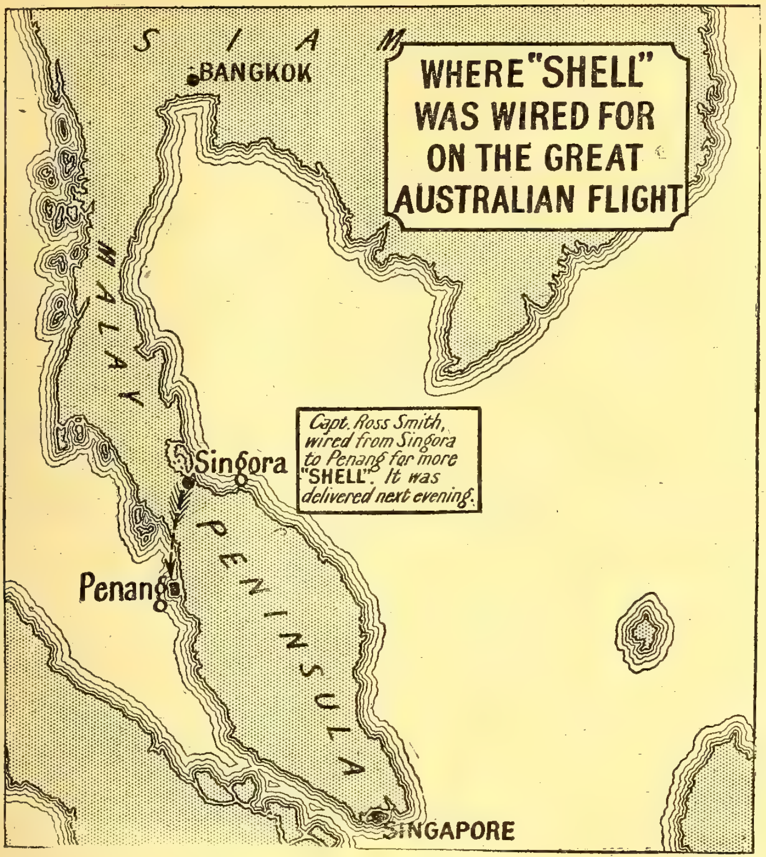
The manufacture of aeronautical instruments, like the whole industry pertaining to aviation, has entered a new phase with the re-establishment of peace conditions. During the war it necessarily received a huge impetus, demonstrating beyond question the absolute supremacy of British productions.

When the need for instruments for aviation first arose it was only natural that the manufacture of such essentially accurate and reliable accessories should receive attention from firms already engaged on similar mathematically correct articles. Famous for generations in the " service of the world's navigators," Henry Hughes and Son, Ltd., of 59, Fenchurch Street, and Ilford, have devoted much study to the new science of aeronautical instruments. Their productions in this class of work soon became an important part of their business, and with the outbreak of war, few houses were able so rapidly to respond to the country's urgent need.

An official letter from the War Office ran : " You may congratulate yourselves on the present splendid output of aeroplane compasses, without which, I am afraid, our position would be very desperate, as no other firm has managed to rise to the occasion to anything like the same extent." Further recognition of the service of his firm was the order of " Officer of the British Empire " conferred on Mr. A. J. Hughes.

Undoubtedly, the secret of the firm's great output is the system adopted by which mass production is secured on lines of standardised machine-made goods. Standardisation brought Germany much of the world's pre-war trade—standardisation is now bringing back the trade to this country. Britain has ever held paramount position for work of supreme reliability, and the modern methods of production as instituted in the works of Messrs. Hughes, will maintain and increase her commercial prestige.

One of the best known is the "Husun" type 253 Aero Compass, designed for long-distance flights. It is a specimen of work that tells more than any words how this firm is reasserting British supremacy. The splendid finish, no less than the extreme accuracy of this compass is typical of the wide range of instruments bearing the well-known mark of " Husun."


S I A M
BANGKOK
WHERE "SHELL" WAS WIRED FOR ON THE GREAT AUSTRALIAN FLIGHT
MALAY
Singora
Capt. Ross Smith, wired from Singora to Penang for more "SHELL". It was delivered next evening.
Penang
PENINSULA
SINGAPORE

76

MOST THRILLING PAGES in Capt. Ross Smith's Diary of the Great Australian Flight

DECEMBER 2.—"Left Bangkok 7.0 and arrived at Singora at 1 . . . met heavy monsoon; . . . Almost blinded with rain but country impossible for landing . . . Worst flying conditions ever encountered . . . The Aerodrome at Singora is bad and stumpy. Had to land in a cross wind on a small dry patch. Safely down with luck. Later taxi-ing the machine, tail-skid caught root and broke fitting; not serious . . . Decided that, owing to weather we could not reach Singapore without more petrol. Wired Asiatic Petroleum Company,* Penang, to send urgently. During night heavy squalls, crew held machine all night . . .

DECEMBER 3.—Torrential rain with wind. Repaired skid, crew wet through, working on machine all day cheerfully. Petrol arrived evening; raining too hard to put in."

**Proprietors of "Shell" Motor Spirit.*

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MOTOR SPIRIT

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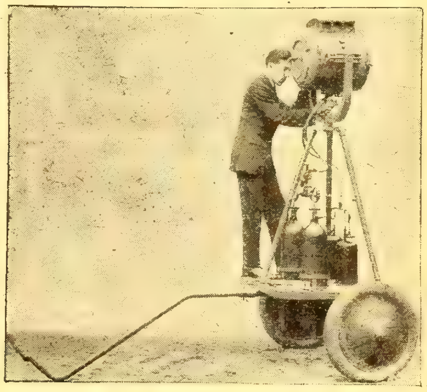
Ground view of Aeroplane Landing at Night.

AS ADOPTED BY AIR MINISTRY.



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LONDON, S.W.1.

Telephone: VICTORIA 3540 (3 lines). Telegrams: "EDIBRAC, 'PHONE, LONDON."

THOS. FIRTH AND SONS, LTD., SHEFFIELD.

The well-known firm of Sheffield steel makers, Thos. Firth and Sons, Ltd., has been especially closely associated with the aircraft industry since its very early days. They were the first specialists in high-grade steels to foresee the immense future of aircraft, and with characteristic enterprise set to work to anticipate the demand which they felt assured would soon arise for steels to be used in their manufacture.

While aeroplanes were still in a highly experimental stage, Thos. Firth and Sons, Ltd., after considerable research and experiment, produced a range of steels in sheet and bar form specially adapted for aircraft construction. It thus happened that when the war broke out and an unexpected demand for aircraft suddenly arose, there were already available excellent and standardised steels for the purpose. It is undoubtedly due to the pioneer work of this firm that the production of aircraft in large quantities was greatly facilitated.

An important item in the wartime output of Thos. Firth and Sons was stainless steel, a material the future prospects of which are very great. Although the most interesting property of this steel is its resistance to rust, its value for the purposes of aircraft has been due to another peculiarity, that of resisting the action of heat and of retaining a high tensile strength at high temperatures. These virtues made it of particular value for valves, and very large quantities of stainless steel valves were used in aero engines in the war.

Now that unrestricted development of this steel can proceed, its appearance may be shortly expected in many applications where its properties of resisting rust and corrosion, freedom from scaling at high temperatures, and high tensile strength render it almost indispensable.

In addition to stainless steel, Thos. Firth and Sons are manufacturing a standardised range of carbon and alloy steels, designed to comply with a higher standard than that imposed by the specifications of the Air Ministry and Engineering Standards Committee. Among these steels will be found a suitable quality for every purpose involved in the manufacture of aircraft and their engines.

Apart from their more standardised lines of manufacture, the firm intends to continue its policy of progress, and its research laboratory is equipped for the investigation of problems concerned with the development of steels with which to keep pace with the advancing requirements of aircraft industry.

In addition to the manufacture of constructional steels for the aircraft, automobile and allied trades, Thos. Firth and Sons are well known as specialists in high-speed and other tool steels, and in drills and other engineers' tools. The post-war demand for the various grades of their Speedicut high-speed steel is very great, and a large part of their modern factory at Tinsley is devoted to its production.

Their engineers' small tool plant has been largely increased in size to cope with the growing market for its products, and its output is being so organised that a representative stock is constantly held of a very wide range of all the high-speed drills, reamers, and milling cutters likely to be required for urgent delivery.

RUBERY, OWEN AND CO.

Rubery, Owen and Co., of Darlaston, Staffordshire, have catered for the needs of British aircraft manufacturers in such matters as pressed steel work and in the manufacture of turnbuckles, eyebolts, bolts and nuts, etc., from the beginning.

Their work has always been excellent, and, during the period of hostilities, their output must have been enormous.

They are still open to undertake any work of this class, and they have in hand a stock of various sizes of bolts and nuts and turnbuckles from which they can give immediate delivery.

"K.L.G." SPARKING PLUGS.

The "K.L.G." plug owes its inception to Mr. Kenelm Lee-Guinness, who discovered that there was not a plug in the world that would stand up to the work of racing-car engines just prior to the war. Exhaustive and protracted tests resulted in the development of a plug that was considered to be up to the standard for racing-car engines of the time. These plugs were fitted to the Sunbeam car driven by Mr. K. Lee-Guinness in the 1914 International T.T. race.

At the time these plugs were not produced commercially, but on the outbreak of war the demand for plugs of this nature led the Air Board to urge Mr. Lee-Guinness to extend his personal work to meet national needs.

From this time until the present day K.L.G. plugs have been produced in ever-increasing quantities and it is sufficient to show the high opinion that the authorities held of these plugs, that, in spite of the continuous expansion of the factory, it was never able to satisfy the demands of the Air Ministry, although they were being produced at the rate of two million plugs per year.

The unique experience gained during the war is now being concentrated on the post-war editions of this famous spark producer. It is interesting to note that K.L.G. plugs were used on all the British machines entered for the Atlantic flight, on the Sunbeam engines of the R.34, on the double Atlantic crossing, on all the competitors entered for the Aerial Derby, on the Napier engine of the Alliance "Seabird" that flew from London to Madrid non-stop, etc., etc.

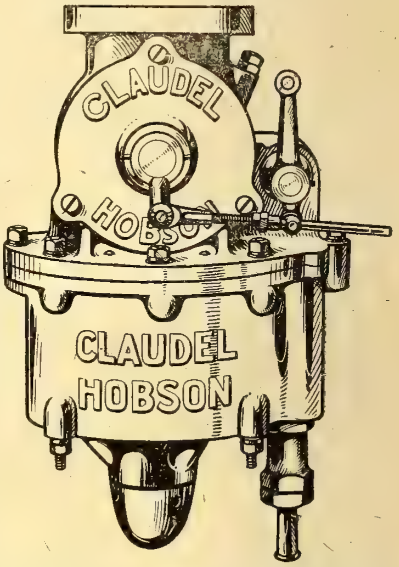
WAKEFIELD'S CASTROL.

Messrs. C. C. Wakefield and Co., Ltd., of Wakefield House, Cheapside, London, E.C., who have recently opened an office in Paris at 21 Rue du Mont Thabor, are known all over the world as the manufacturers of "Castrol R," the aero-engine lubricant, which has been foremost ever since the beginning of aviation. Its unique properties have established for it a reputation of the highest class, and the best tribute to its value is the fact that Castrol R. was selected by every competitor for the flight across the Atlantic, and also by all those who started on the recent historic journey to Australia.

Practically every flying record of every kind in Great Britain since 1909 has been accomplished with the aid of this lubricant. It has earned countless testimonials, prominent among them being one received from the Air Council—which we believe to be the first testimonial ever given to any firm for publication by this Council—regarding its performance on the Sunbeam motors "R.34."

The principal features of this oil are its absence of carbon deposit, its remarkable resistance to extreme cold, and its high viscosity at high temperatures. During the greatest flight of all, that by Captain Ross-Smith, from London to Australia, the oil met with every kind of climatic condition, but carried the Vickers-Vimy Rolls-Royce motors through triumphantly.

CLAUDEL-HOBSON CARBURETTERS.



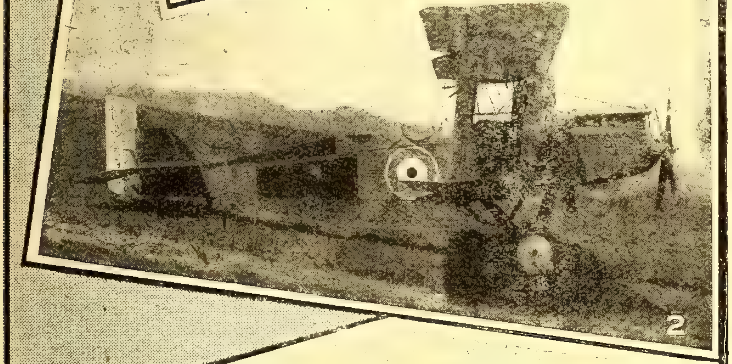
It is sufficiently well-known to what extent Claudel-Hobson carburetters were used in the Air Services of the Allies during the war, and taking into consideration the esteem they then won, it is only natural, perhaps, to hear that in practically all the big things done in this country since the Armistice, such as the first direct flight across the Atlantic by Capt. Sir John Alcock on the Vickers-"Vimy"-Rolls, the England-America-England flight of H.M.A. "R.34" (Sunbeam Coatalen engines), the London-Madrid non-stop flight of the Alliance "Seabird" (Napier Aero engine), Capt. Gathergood's little bunch of speed records from 5-400 kilometres on the Airco D.H.9R. (Napier Aero engine), the England to Australia flight of Capt. Ross Smith on the Vickers "Vimy-Rolls," etc., have all been done with the aid of the Claudel-Hobson carburetter.

ACCLES AND POLLOCK, LTD.

During the war many firms whose productive plant was capable of producing aircraft parts of any kind were kept fully occupied in turning out large quantities of parts and fittings to standard specification. With the conclusion of the war, and the public clamour for economy, huge contracts for aircraft were cancelled, with the result that any amount of material in all stages of manufacture were left on the hands of the manufacturer for him to dispose as he thought fit and profitable. Accles and Pollock, Ltd., the well-known makers and workers of weldless steel tube, were engaged in making aircraft fittings during the war, but, with the signing of the Armistice, the lack of demand, corresponding with the cancellation of contracts, has caused them to concentrate solely on the manufacture and manipulation of steel tubing, and, as such, offer their assistance to the Aircraft manufacturers in general. Fortunately, their factory is fully occupied on the production of tubing for all manner of work, but it is not too fully occupied for them to deal with anything that may be required by the Aircraft Industry.

Accles and Pollock, Ltd., at present, have on hand a surplus stock of fittings and parts to the value of about £6,000, and only the lack of spare labour prevents them from clearing it out of the shops and passing it into the melting-pot. They point out that should any of their tools or any of this surplus stock of parts be of any use to any aircraft firm, they would be most willing to meet them.

1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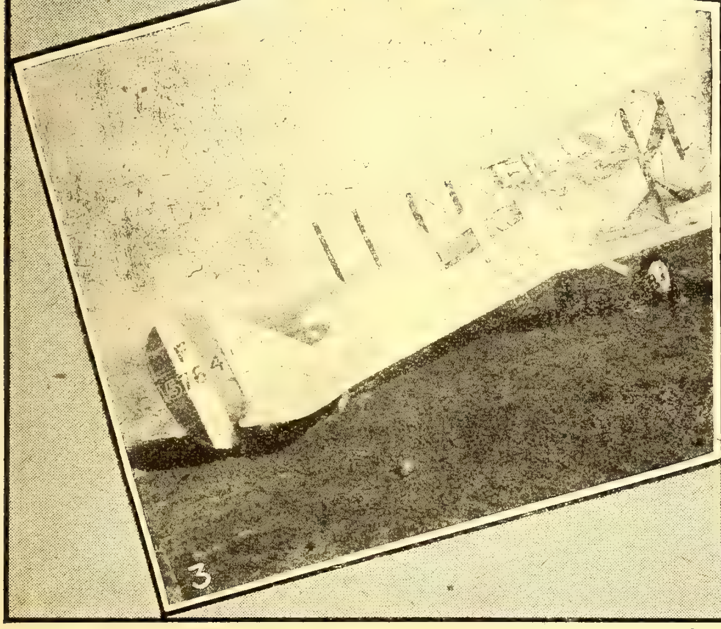
3

EXPRESS TRAVEL BY AIR

The remarkable reliability of the Airco machines which are running the Daily Air Service between London and Paris is shown by the following summary of flights and mileages :—

1. THE NEW AIRCO 16.

45 Flights were made during the first twelve weeks, with a total approximate mileage of 11,400 miles.

2. AIRCO 9B

37 Flights have been accomplished by this machine, covering an approximate total of 9,250 miles.

3. AIRCO 4A.

This well-known machine has successfully made no fewer than 95 flights between London and Paris during the first 12 weeks, covering a total distance of approximately 23,750 miles.

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HOW TO PRACTISE PARACHUTING.

By LT.-COL. H. S. HOLT, C.B.E.

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A TRAINING MACHINE.

Since the writer's last article appeared it has been officially stated in the Press that the authorities have definitely decided to make life-saving parachutes an integral part of the equipment of their Service machines. The carrying out of this decision not only entails a large expenditure, but greatly affects the safety of aviators in the future. It becomes, then, of great interest to know what general principles are guiding the Technical Committee in their selection of the type of parachute to be adopted.

Some months ago a curious article appeared in the Technical Press. Published anonymously, the writer happens to know that it actually emanated from official quarters. Purporting to be advice to parachute inventors as to what direction their activities should take and as to what was or was not likely to be acceptable to the Parachute Committee, it opens with this remarkable dictum :—

"The principal object in equipping aircraft with parachutes is to inspire confidence in those who use aircraft."

Some simple-minded persons, like the present writer, have hitherto been under the impression that the principal object of a life-saving parachute was to save life and that its value was proportionate to its ability to do this under any conceivable conditions. Apparently it doesn't matter what the parachute is or does if only the authorities can camouflage it to an appearance of safety and reliability. If this article really represents the considered opinion of the Parachute Committee, it will hardly tend to "inspire confidence" in the judgment of that body.

Once upon a time a lofty factory was erected with two wings. Each was equipped with a different type of fire escape.

No. 1 was a regular iron staircase with balustrade and all. Everyone was delighted with the iron staircase, and when the company ordained a weekly fire-drill the employees voted it good fun running down the staircase. No. 2 was merely a seemingly rickety iron ladder which swayed and shook in the wind, and only one or two venturesome spirits would trust themselves on it.

Then one day the factory caught fire. The iron staircase proved too heavy; the heat quickly loosened the cement fixings, and when the employees crowded onto it the whole crashed to the ground. In the other wing there was only the iron ladder, and the employees had to choose between this and being burnt alive. No one bothered their heads then as to whether it shook or swayed, they clambered down it and all escaped.

Just so there are two general types of life-saving parachutes :—

No. 1 type is apparently simple and certain in action when used from aircraft flying normally and under complete control and doubtless inspires confidence in those who make descents for pleasure or practice or advertisement, but which, in the opinion of some of us, will merely prove a broken reed in the hour of need.

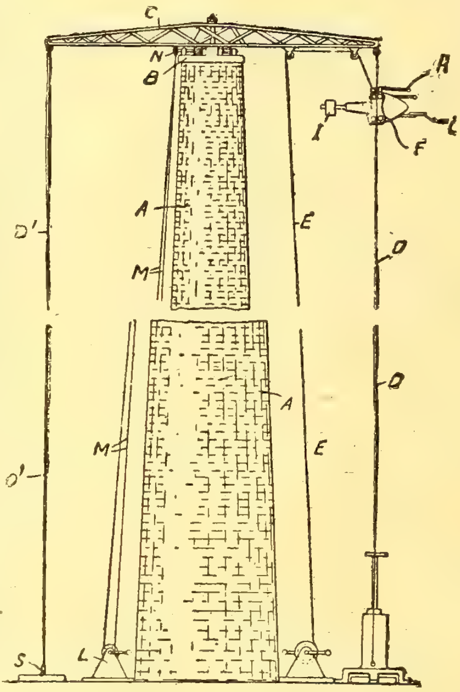
No. 2 type may seem less positive and certain in action, and parachutists would very likely feel less confidence in using it for practice descents. But if No. 1 would prove useless in the majority of peace-time accidents, while No. 2 would afford at least a sporting chance of escape in almost any conceivable circumstances, it seems obvious that No. 2 type should be given exhaustive trials instead of being condemned off-hand, merely because it does not "inspire confidence."

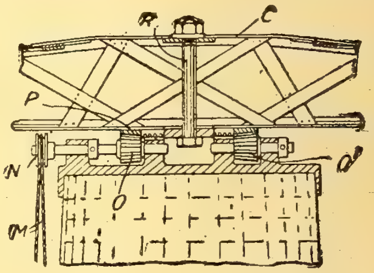
The writer is very far from wishing to minimise the importance of the passengers feeling confidence in their parachutes, but surely the right way to obtain this confidence is by making practice descents. A Service airman undergoes a severe training in everything affecting his duties with the single exception of parachuting. Then when disaster comes to his machine, he is expected to make his escape by parachute necessarily hurriedly and possibly under difficult conditions without previous training and experience.

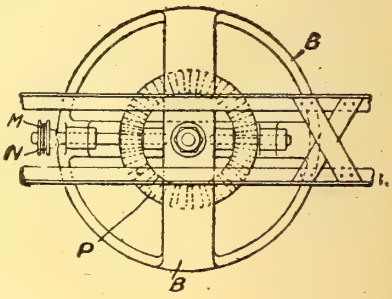
It may be objected that parachute practice involves risk and it is for this reason that the writer ventures to describe a machine he has devised for practising parachute descents with little, if any, more risk than attends the use of an ordinary lift.

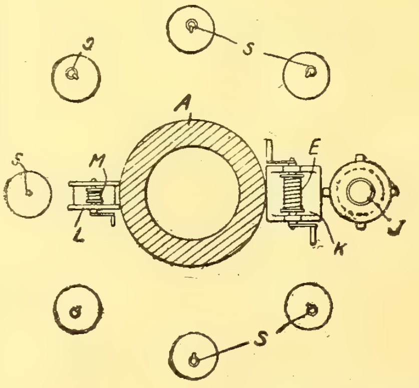
Any derelict factory chimney of sufficient height, such, for instance, as the destructor chimney at Aldershot, could be easily and inexpensively adapted for the purpose.

The machine consists essentially of a carriage travelling freely on a vertical or nearly vertical cable. In the first instance the writer proposed to employ a balloon to support the upper end of the cable, the lower end being secured to the ground, but though this would have been a cheap and simple way of carrying out his purpose, the writer came to the conclusion that there were too many practical obstacles to its successful working. In its present simplest form the cable may be attached by means of brackets to any sufficiently lofty building. But for obvious reasons a tall factory chimney is the most suitable and convenient erection for the purpose.









The diagrammatic drawing appended shows the general arrangement. The main cable "D" is secured at one end to one of the rings "S" set into cement, thence it travels over pulleys attached to the arm "C" and descends again to another of the rings "S." Means are provided for straining this cable. The arm "C" is a light lattice steel frame, pivoted at its centre and capable of being rotated in a horizontal plane by means of the cord "M" passing over the pulley "N."

The object of this rotating arm and series of rings "S" is to allow of the position of the main cable "D" being varied according to the direction of the wind at the time. A light bamboo carriage "F" is mounted to run freely on the cable "D." It is fitted with a long arm carrying an adjustable counter weight "I" to balance the weight of the passenger. The passenger stands on the platform "A," an arm being provided for him to hold on to. The carriage "F" is hoisted by means of the elevating cable "E" and the windlass "K." The latter is fitted with a brake so that the descent of the

Beardmore

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RECORD on RECORD

earned **Beardmore Engines** more than national fame.

They were events in the World's Aviation Progress, and recognised as such.

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AeroEngines

carriage can be checked or stopped instantaneously; and as an additional precaution a screw or lever brake "H" is attached to the carriage which may further be fitted with an automatic check brake which comes into action only when the carriage is nearing the ground. A pneumatic buffer "J" may also be employed, but the need for it is doubtful.

The *modus operandi* is as follows :—The arm must first be rotated into such a position that the main cable is on the lee side of the chimney, and the two ends of the cable are then made fast to opposite rings "S.S."

If one of the ordinary single parachute systems such as the Spencer or Calthrop is to be used, the passenger will take this with him on the carriage. He will then be hoisted up to the top of the main cable, in which position he can attach the parachute receptacle to the arm "C." The parachute cord will be attached to his harness in the ordinary way. As soon as all is ready he signals to the operator at the windlass who takes off the brake allowing the carriage to fall. As the passenger falls with the carriage the parachute is withdrawn from its case, and the cable being on the lee side the parachute is blown away from the chimney. As soon as the parachute is sufficiently inflated, but not before, it lifts the passenger from the carriage. Should the parachute fail to inflate, the operator at the windlass will check the fall of the carriage, or it may be checked by the automatic check brake, so that passenger and carriage reach the ground at a safe speed.

When a passenger is having his first lesson, it will be well on the first two or three trials to reduce the rate of fall of the carriage to such a slow speed that the parachute does not open or not enough to lift the passenger off the carriage.

If one of the parachute systems is used in which the parachute is carried on the passenger's back, the *modus operandi* will be essentially the same; the cord for withdrawing the parachute being attached to the rotating arm. If the Autochute or any similar compound system is being used, the passenger will hold the pilot parachute in his hand and release it the instant the carriage begins to fall.

When the passenger has made a few descents and acquired confidence in his parachute, he need not wait to be pulled off the carriage, but he can jump off as soon as he sees the parachute commencing to inflate.

Anyone practising occasionally on this machine must acquire a coolness and confidence in his parachute which may stand him in good stead when the hour of need comes. If this appliance was used for testing parachutes with dummies, it would mean a great saving of time compared with the usual method of employing kite balloons or aeroplanes as well as saving of petrol or hydrogen.

Given the necessary chimney, such, for instance, as the old destructor chimney at Aldershot already referred to, the actual apparatus need not cost more than £200 or £300.

When will the Air Council, and more especially the Civil Aviation Department, come down from the clouds and realise basic facts?

So far their propaganda activities mostly take the form of glowing accounts describing official aircraft trips. But the man-in-the-street, even the problematic "business-man-in-a hurry" who was to fly from London to Manchester for ten minutes' business talk, remains cold.

It is, of course, pleasing and gratifying to read of luxurious trips (at the public expense) made by distinguished officers with printing presses and brass bedsteads, chefs and hot dinners as accessories in the picture, but the civilian of ordinary intelligence knows that one spark from a boot-heel might send the whole bag of tricks crashing to earth, bedsteads and all.

This form of propaganda must be very costly, and the same amount of money spent on subsidising the P.O. to initiate one or two express letter and parcel services from London to the North of England would do much more to impress the business man. Meanwhile, for want of other work, aircraft manufacturers are turning out boot-jacks and milking-stools and such like. But when the shortage in these articles, due to the war, is made up the trade will naturally revert to pre-war makers.

Then the trouble will come. Pioneers always suffer, as witness the fate of early electrical engineering, safety bicycle, tyre and motor-car companies. But it will be as nothing to the casualties that will await aerial enterprises. Let us look facts in the face. Airships and aeroplanes are now made as safe and reliable as they are likely to be for some time, unless some epoch-making invention appears. Still the public remains cold. Why? Because aviation is too uncertain, too risky and too costly : but first and all the time *too risky.*

"Accidents will happen"—and do happen every month. What is the remedy? The great Atlantic liners, immeasurably safer than any aircraft, carry lifeboats for all. Similarly, every airship or plane should carry lifeboats for all the occupants. The only aerial lifeboat known up to now is the parachute. But it is not enough merely to make parachutes compulsory and to inform the passengers that they are carried. The public, or at any rate the potential flying public, must have facilities for seeing them in actual use and for trying and practising with them themselves. This means public demonstration grounds and some device to enable practice descents to be made without any risk. The writer has thought it worth while to describe his own device; but there will no doubt be better ones forthcoming soon.

Once convince the civilian that he has a really reliable means of escape even in case of the worst accident to his machine, and you will go far towards making him regard aviation in a new light.

GNOME AND LE RHONE ENGINES.

The Gnôme and the Le Rhône engines at the Paris Show, naturally enough, will be under the ægis of the Société des Moteurs Gnôme et Rhône.

It should be noted that the sole licensees for these engines in Britain and the British Colonies are Peter Hooker, Ltd., Walthamstow, who are associated with the Gnôme and Le Rhône Engine Co., of 27, Buckingham Gate, London, S.W.

A BUSINESS OPPORTUNITY.

The proprietors of a successful wholesale motor accessories business in London announce that it is for sale, and suggest that it would be a good investment for a little private syndicate of demobilised officers.

This business was employed in manufacturing aeroplane sundries during the War, and at the end of last year when the demand more or less ceased, the factory was closed and new premises were opened in the West End to supply motor accessories.

The business has been running about a year and the turnover has reached about £2,000 a month. There are 800 customers on the books, and the business employs six travellers and agents, besides a manager and four or five clerks at the offices and warehouse.

As the owners were not formerly interested in this class of trade, and wish to return to their own business, they are open to sell the one in question. They are gradually reducing their stock, and are not making further purchases, and stock at present stands roughly at £1,200. It can be bought or not, as desired, at valuation.

The premises, which comprise three offices and a basement warehouse, are held on a three-years' lease at a rental of £250 per annum. About £250 has been spent in structural alterations and fittings, and the owners are open to dispose of the lease to anyone interested for this figure. They are asking about £300 for goodwill, and as they have established the nucleus of a sound business, and have already a large number of customers on the books, they think this appears to be a very favourable opportunity for anyone to acquire the business on good terms.

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IF "THE AEROPLANE" WERE RUN BY THE AIR MINISTRY.

BY "THE SNIPE."

The Editor of THE AEROPLANE clicked smartly to attention and saluted the Director-General of Technical Aeronautical Publications, who had commandeered the Guildhall in order to form a new branch of the Air Ministry which had been manned in order that peace might be waged efficiently.

The Editor seemed ill at ease; the D.G.T.A.P. looked grim. Above his throne Gog and Magog looked down. They were clothed in barathea cloth of different shades, for another change in R.A.F. uniform was under consideration and it had been found convenient to use them as dummies for the inspection of the vast committee that would shortly throng the historic hall.

Gog looked rakish in a steel helmet fringed with gold lace; Magog appeared less warlike in a Tam-o'-Shanter adorned with the R.A.F. badge and osprey plumes.

The D.G.T.A.P. selected with great care a cigar from a lordly case, desired a Staff Captain to present his compliments to the Adjutant and to ask him to be so kind as to give instructions to the Orderly Officer to order the Orderly Serjeant to detail an Airman to bring the Ministerial cigar-cutter, and then turned to the Editor.

"You are aware," he said, "that in accordance with the absolute power conferred upon us by the amended Defence of the Realm Act for the Prosecution of Peace this great department has been formed. Now that we are no longer distracted by war, and have practically succeeded in destroying the aircraft industry, work in which we have been ably assisted by Parliament, we propose to assume entire control over the technical Press, and we have no doubt that our efforts will be as successful as they have been in guiding a great industry to its present state of happy stagnation."

He paused as an Airman, in an experimental uniform of blue and khaki tartan, saluted and placed before him the Ministerial cigar-cutter.

Having cut and lighted his cigar, he continued:

"I have sent for you to-day because I am informed that the technical publication known as THE AEROPLANE is at present not being conducted upon the recognised lines laid down for transacting business in great Government Departments. For example, I am informed that, though you have up to the present been allowed to continue to hold the position of Commanding Editor, you perform menial tasks, such as the writing of what I believe you call leading articles, and such subordinate duties. Your staff is undisciplined and undrilled. Working hours are devoted entirely to the production of the publication instead of being apportioned to healthy physical training, manly and womanly sports, such as lawn tennis, to warm the blood when summer sets in with its usual severity, and less violent pastimes for the temperate days of winter. It is with regret that I have been driven to the conclusion that you have shown no capacity to command. Your unit has caused no passionate comments either in Parliament or in the Press which is as yet uncontrolled. Unless something spectacular is done the public will not know how its money is being spent."

He relit his cigar, which had ceased to glow during the speech, and made a fresh start.

"The allied unit which undertakes the printing of the publication is in the same state of undisciplined devotion to its work. It merely prints as it did before the Peace, whereas it should by this time have produced posters in colour that would show the public the reasons for raising the next National Loan.

"I have already drafted a few catch-phrases for posters which will show what we are doing, and will attract the kind of recruits we require when we raise the establishments of the units. Here are a few rough notes. The pictorial work will, of course, be carried out by the new Poster Ministry which is being formed."

The D.G.T.A.P. displayed large sheets of fine vellum upon which had been scrawled:

"YOU'LL ONLY PLAY AND NEVER WORK,
SO JOIN UP AND BE PAID TO SHIRK."
"SPLENDID FUN! JAZZ DANCES!! PRETTY WRAFS!!!
TICKLE-TOE AT THE EXPENSE OF YOUR COUNTRY."
"CAN YOU PLAY THE BANJO?
YOU CAN BANJE IN THE R.A.F.
QUICK PROMOTION FOR JAZZ MUSICIANS."

"Rather neat, I think," said the D.G.T.A.P. complacently. "No damn silliness about your King and Country needing you. Just a human appeal to the type of person we want.

"But to resume," he said, raising his eyes from the sheets of vellum and frowning at the Commanding Editor, "it is obvious that you have shown no capacity to carry on your duties. With regard to your present staff, are they competent to perform the menial tasks of producing the publication?"

"The most highly trained and efficient staff obtainable," said the Editor loyally.

"Good. That leaves my hands entirely free. I can appoint to the higher commands officials who are not hampered by technical knowledge, and who can consequently devote their energies to disciplinary and administrative duties. You will return to your unit and carry on until such time as the higher appointments have been made. You may go."

"I prefer to resign, Sir," said the Editor.

"Resign in the face of the fiercest peace in history! It cannot be allowed. You may go."

The Editor saluted. He felt that his thoughts might be more forcibly expressed when he had left the Presence.

. . . .

The next few weeks were like a feverish dream. A Marshal of THE AEROPLANE was appointed with a Staff of senior officers whose names required a special issue of the "London Gazette." All the other tenants in 175, Piccadilly were evicted and Burlington House opposite was requisitioned.

The entire country was rainbow-hued with recruiting posters, and each day the recruits were drilled in the courtyard of the Royal Academy. A portion of Hyde Park had been railed off, and thousands of carpenters were erecting huts for the newly enlisted Airmen (who were distinguished by the new badge showing a pen and ink-eraser crossed) and hostels for the W.W.R.A.F. (Women Writers, Royal Air Force).

At the printing works in Chancery Lane similar activities were taking place. All the buildings between Rolls Passage and the Record Office had been taken over and were being redecorated.

"The time is now ripe," said the officer in charge of the Civil Transport Department, T.A.P.T.D.17, which occupied the entire upper floor of Burlington House. "We must blaze the trail from Piccadilly to Chancery Lane."

"How do you blaze a trail?" asked the second in command.

"Oh, you just make blazes along it, don't you know. What?" replied his chief.

"We've already burnt all the new machines we have in stock," said his junior regretfully. "Shall I ring up Supplies to order some more?"

"Please. And say it's urgent. In the meantime we will begin blazing with mechanical transport."

"It's all sold," said the second in command.

"Nonsense! Borrow a few thousands of Sappers or Miners, I forget which kind dig. Probably the Miners are on strike, anyhow, so you had better indent for Sappers. Set them to work to excavate in any of the abandoned M.T. Parks, and if they go deep enough into the mud they will find plenty of lorries for the purpose. The mining rights in these Parks are to be put up for auction shortly, so we are only just in time. See to it."

"It shall be done, Sir. We'll make a blaze in England that will never be put out."

For weeks the peace was waged relentlessly by thousands inspired by the Will to Win promotion. The first lorry to be disinterred was discovered just above the old red sandstone stratum, and was towed to Burlington House by a tank. So great was the energy displayed that it was found that within a month, during which a new chassis, engine, and body had been fitted, it would run under its own power. The O.i/C of T.A.P.T.D.17 had it loaded with petrol, the Marshal of THE AEROPLANE took his seat beside the driver, distinguished representatives of the Admiralty and War Office sat on the petrol tins behind, and, after waiting for the Press photographers to do their work, started amidst ringing cheers on the great pioneer enterprise of blazing the trail to Chancery Lane.

The deathless story of that journey is written in letters of fire in the annals of the Force. It will be remembered that the old petrol tank, the only part of the lorry to be retained, had been found in a leaky condition. The leak had been stopped with chewing-gum by an ingenious mechanic, but the gum is supposed to have become hard and brittle, possibly due to having been insufficiently masticated. Whatever the cause, we know that it fell off in Piccadilly Circus and that a broad stream of best aviation spirit gushed into the road.

We know that the lorry proceeded to Leicester Square without the distinguished pioneers being aware of the mishap, as they thought the shouts of the vulgar mob were plaudits and were busy saluting to right and left.

The collision in Leicester Square with a W.D. lorry that was conveying anti-aircraft ammunition to a secret dump precipitated matters. It will be remembered that both lorries caught fire and that the explosion of the ammunition burst open the petrol tins, so that rivers of flame poured down the streets and into the basements of the adjacent houses. For days the West End of London was a raging furnace, and when at last the fire was quelled, by the old process of blowing up threatened buildings before the flames could reach them, it was found that a broad tract of devastated territory lay between the H.Q. in Piccadilly and Charing Cross, so that the first part of the route to Chancery Lane had been cleared and the trains of lorries that would shortly carry "copy" to the printers could pass on their way unimpeded.

All this is public knowledge, but the Editor of THE AEROPLANE saw behind the scenes.

"It's magnificent, but it is not Peace," the Marshal, who was one of the few survivors, had said. "However, we must steel our hearts. The trail must be blazed. Next time we will begin at Charing Cross. But I would like one of our latest bombers to be in that offensive. The M.T. section have got all the decorations out of this one."

Historic words that will be remembered while the Ministry lasts.

But while these events were taking place other departments were not idle. A permanent Committee composed of many hundreds of high officials, with power to call cubist artists, theatrical costumiers, and other experts, had been sitting for weeks to decide upon the next uniform cover for THE AEROPLANE.

It was this Committee that finally obtained powers to take over the editorial offices in which the Editor and Sub-Editors of THE AEROPLANE were still allowed to toil. There came a cold November day when they found themselves homeless. Sentries guarded the door of the building from which they had been evicted by the Committee. Their papers, files, their priceless records of aviation had been destroyed.

. . . .

At nightfall, when cold November rain was falling and dim lamps were throwing long reflections on the roadway of deserted Piccadilly, the Editor of THE AEROPLANE sat on the cold kerb in front of what had once been his office. Broken hearted, he could not restrain the not unmanly tears that dimmed his sight so that he had to remove his monocle. The eye-glass slipped from his unnerved hand and was shattered on the pavement. It was the last straw. With a groan he rose and hurled himself prone in front of an approaching three-ton lorry. He felt the front near wheel of the lumbering vehicle touch him. . . .

. . . .

He woke to find a Royal Aero Club waiter shaking his shoulder gently. All the other members had gone home and most of the lights had been turned out.

"But it would be worse than that, really," he said, as he made his way towards the hall.

INTELLIGENCE IN THE R.A.F.

During the war, in a certain very exclusive and recherché part of the Thames Valley there existed an R.A.F. training centre for the purpose of instructing all manner of people, from almost every walk of life, in all that there was worth knowing in the administrative and technical branches of the Air Force. This super Clark's College, in the short period of two months, turned out numbers of people who, as the result of an examination, were deemed qualified by the high authorities at the Hotel Bolo (née Cecil) to assume the responsibilities of Sec. Lieuts. (Ad.) and Sec. Lieuts. (T.).

Among each course, perhaps 40 per cent. were Service men, the majority of whom were N.C.O's in the R.F.C. and R.A.F., men who, having served in the ranks of the R.F.C. and worked their way up to N.C.O's on sheer merit, were eminently suited to hold commissioned rank in the R.A.F. The remainder of the Service element was composed of crocked infantrymen and other medical misfits who were adjudged by a stringent selection board as being qualified to take a commission in the R.A.F. as Sec. Lieuts. (A. or T.) by their pre-war experience and knowledge, at the same time being sufficiently old or war-worn to be of no further use for active service.

All these men took the course in the rank held at the time of being summoned to report at the school, feeding in their respective mess-rooms and drawing their ordinary pay. They were housed in empty billets and were not allowed fires except under the M.O.'s orders, no lights after 10 p.m. and very few facilities for working in the evening. There was half an hour's drill before breakfast and no forms of organised exercise for all to take part, the football, cricket, or rowing teams consisting principally of the instructors and some of the privileged officers.

The remainder of the course consisted of a few officers transferred from the Army owing to unfitness, a few crashed pilots and a large number of civilians, many of unknown origin and quite unfitted by their social and educational standard to hold His Majesty's commission. These people were gazetted as Sec. Lieuts. on entering the school and therefore entitled to the privileges of the officers' mess, with its numerous customs and comforts, though many of them were not sufficiently well born to appreciate them.

The high standard of intelligence shown by some verged on the extraordinary, of which the following is a fair sample. During the course of a lecture by a long-suffering and underpaid N.C.O. instructor, the class was being told of the various causes of tail and nose-heaviness. The instructor gave all causes and remedies, at the same time mentioning that some machines, owing to the extreme heaviness of the engine, etc., had lead placed in the tail end of the fuselage to counteract this. He also recalled that sometimes it had been discovered that careless mechanics had been known to leave spanners and other articles in the fuselage during an overhaul.

He then asked a particularly bright member of the class to define tail-heaviness and suggest a remedy. The cause was duly given with much prompting, together with the following remedy :—"Strip the fuselage to ascertain if any careless mechanics have left any lumps of lead, spanners, or other heavy articles in the fuselage." This "officer" passed the final exam. !

Perhaps the unkindest cut of all in connection with this school was the fact that a man who was previously in the ranks was not gazetted until he passed the final exam., whereas a civilian was gazetted on joining the school. Therefore, on passing out, the civilian always had two months' seniority over the mere soldier.

Again, should an N.C.O. or a "ranker" fail twice he was returned to his unit as useless for commissioned rank in the R.A.F., and therefore blighted of any further chances of applying for a commission anywhere, whereas if the civilian "officer" failed he was sent to Blandford as an officer in the R.A.F. either for draft conducting purposes or for disposal to fill up any new "hot-air departments" formed at Bolo, or elsewhere. Now one knows how the R.A.F. maintained its supply of trousers polishers during the war.

As for the peace-time R.A.F. it is comforting to know that such a state of affairs cannot exist when once the Force begins to feel its feet, although it is a well-known fact at the present time that in the wild orgy of demobilisation large numbers of the right stamp of man are being placed on the unemployed list, whereas a fair number of these "unwinged" officers are being retained owing to the fact that they are so firmly rooted in the mire that they themselves have carefully prepared.—L. L. B.

TO ALL THOSE WHO HAVE NOT YET SPENT THEIR GRATUITIES.

He was such a nice man.

He had features like a good-natured Mephistopheles, and he spoke American. He drank cocktails most graciously, and it was a pleasure to give him lunch. He seemed to cast an atmosphere of mysterious prosperity over the club lounge.

Then he got going.

He said that, of course, it was only because he was speaking to a friend, and a friend whom he could trust, that he mentioned his great scheme. It was a glorious scheme, both ennobling and advantageous. He proposed to feed the starving population of Europe from great stores of food he had accumulated in America; and he needed really smart Continental managers to make a success of it.

The trivial part of the whole matter was, that he required only £100 from each prospective manager as a guarantee of good faith.

He waved a bunch of papers in his right hand, and produced a gold cigarette-case with his left. He said that anyone could go through the papers, but he put them away and offered a Gold Flake.

It was very good of him to take the cheque for £100. Somehow, one felt it was more than good of him; it was positively splendid. He said he was leaving for the Continent to arrange matters.

He is still there, but the American Continent is rather a large place in which to find him.

Oh! you gratuity-splashers, if you meet anyone like that, hit him with a hatchet, quick.

This appeal is issued by the Society for the Protection of Young Airmen. The Society consists of one. I've been bitten already.

BILL.

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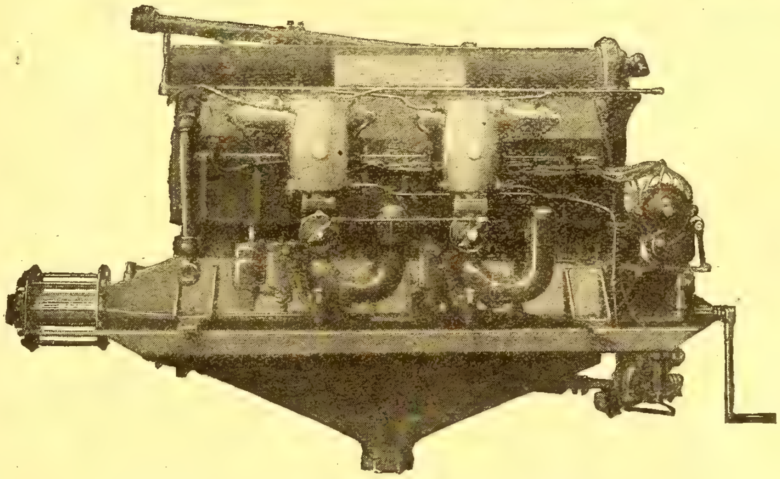

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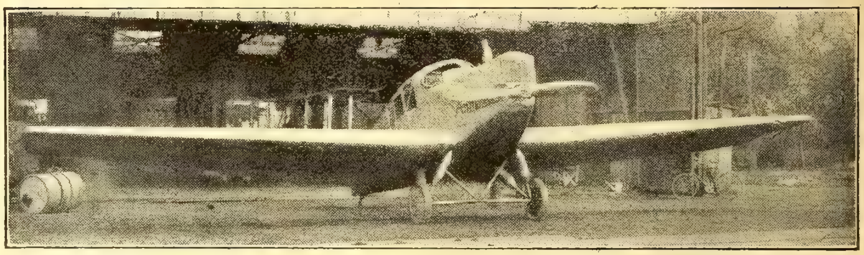


The Junker Monoplane-Limousine (160-h.p. Mercédès engine).

The Lithuanian military authorities have lately come into possession of a remarkable German aeroplane, in quite exceptional circumstances. This machine is a monoplane which, owing to darkness and bad weather, landed at Abeli, close to the Bolshevik front line near Dvinsk, on October 15th, while en route from Berlin to Moscow, with its pilot, a mechanic and three passengers, viz., a Russian and two Turks. The monoplane was seized by the Lithuanians and flown to Kovno by its pilot under Lithuanian escort.

The monoplane represents something quite new in the technique of aviation. It is an all-metal eight-seater machine, fitted with a 160 h.p. Mercédès engine. The metal consists of thin corrugated duralumin plates, or some similar composition. The weight of the monoplane is 1,015 kilogrammes; its useful load is 625 kilogrammes, to which can be added an extra load of 130 kilogrammes, making a total weight of 1,770 kilogrammes. The builders are the Junkers Flugzeugwerke A.G., of Dessau, who have already produced a second model of the kind. The internal construction of fuselage and wings is on a system of aluminium tubes and girders, which gives extraordinary stiffness, combined with remarkable lightness.

The pilot, a demobilised Oberleutnant, Hans Hesse, told me that this construction is similar to that of the new Junkers all-metal war machine. He also stated that the present monoplane had recently created a world's record for altitude, with eight passengers, of 7,000 metres, but he said that the climb was slow. He further described the machine as not very easy to fly, and as having a high landing speed. The cabin, the position of which is clearly shown in the accompanying photographs, is most comfortably fitted for six passengers, very much after the style of a luxurious motor-car. The wings are remarkably thick, and, being hollow, are used for carrying two spare propellers, the petrol tank, a spare set of wheels, and other parts.

The front view of the monoplane is shown in one of the accompanying photographs.

Apart from the technical interest attaching to the aeroplane itself, the circumstances surrounding its capture, and the events leading up to the same are little less than sensational. Readers of THE AEROPLANE may, therefore, feel curious to know a little more about them. The three passengers comprise one Abraham Frankl, a Russian Jew, an engineer in the employ of the Junkers firm, who states that he was being taken on the trip as interpreter; Dr. Dmitri Nicola, alias Sayd Emin, a Christian Turk, and Mohammed Ali Sami, a Turkish subject. The two latter described themselves as in the service of the Turkish Red Cross. They purported to be on their way to Russia in order to enter into negotiations with the Soviet Government for the return of Turkish prisoners of war. Nicola also said that the German Government had verbally asked him to try to make arrangements for the return of some German hostages in exchange for the notorious Radek. Nicola had 80,000 roubles with him, ostensibly as expenses for the pilot and mechanic during the trip, the purchase of petrol, etc.

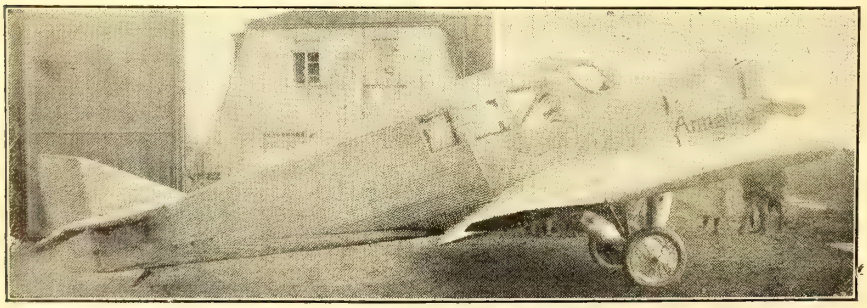
According to the pilot, Hesse, he was simply commissioned by his firm to fly this aeroplane to Moscow in order to make inquiries as to the possibility of selling the patent and establishing a factory in Russia for the manufacture of machines of this type. For the rest, he disclaimed all knowledge of the purpose for which his passengers were travelling to Soviet Land.

The itinerary of the monoplane was briefly as follows: On Oct. 2nd the Berlin Ministry of War arranged for the aeroplane to fly to von der Goltz with an important letter. The aeroplane, however, was not quite ready then, and by the 8th the German Government had changed its plans. Instead of flying to Mitau, the monoplane left Berlin on Oct. 10th bound for Moscow, with its passengers, as already described. It reached Konigsberg on the 13th, having made two forced landings en route owing to minor defects. It left Konigsberg on the 15th and landed at Shavli, a place in Lithuania in Russo-German occupation, between noon and 3 p.m. Here the pilot and his companions were cordially received by both German and Russian officers, and were treated to a good meal. When the Russian officers heard the monoplane's destination they confided numerous letters to the pilot for ultimate delivery in Moscow and Petrograd.

It is significant that although the Russo-Germans profess to be out for a fight to the death with the Bolsheviks, they took no steps whatever to prevent Hesse from completing his journey. From this fact it is naturally inferred that Hesse also carried papers of considerable importance to the Russo-German troops, though, of course, Hesse remains silent on this head. Soon after 3 p.m. the monoplane again took the air, proceeding in the direction of Russia, but at 4 p.m. on the 15th, it landed at Abeli, where, together with its occupants, it was taken in charge by the Lithuanian military authorities. The pilot and mechanic, with their Lithuanian escort, flew to Kovno, but the three passengers were brought here by train.

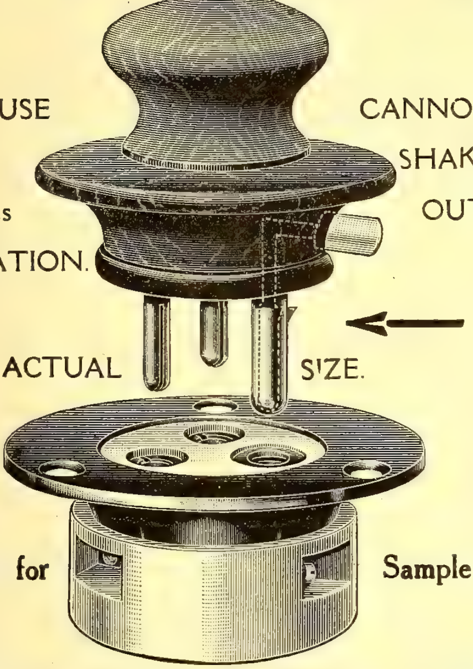
The facts of the case were immediately reported to the British Military and Political Missions, which, in their turn, telegraphed to their Home Governments for instructions regarding disposal of the machine and its occupants, who, in the interim, were detained.

Since then, however, there has been an astounding sequel to the foregoing, in the shape of the escape of the two Turks by aerial route, but not in the same machine. The leading rôle in this romantic episode was played by a young, well-known German aviator, named Rotter, hitherto in the employ of the Lithuanian aviation corps. Early in the afternoon on the day of the escape, Rotter went up to the aerodrome, and suggested to one of his pupils that they should go for a flip over to one of the forts, take a few photographs and return. One of the regular L.V.G. biplanes was requisitioned for the purpose. On landing near the fort, the aeroplane was approached by two respectably dressed civilians, under escort of an armed Lithuanian private. No sooner had the pupil alighted than Rotter produced two Mausers, one of which he deftly tossed down to the civilians, whose identity needs no amplification, while, with the other, he threatened the pupil with an unpleasant death if he made the slightest attempt to interfere. One of the Turks similarly covered the guard, who appeared to be paralysed with terror, for he stood supine while the two Turks clambered into the aeroplane. Under threat of death the pupil was compelled to restart the propeller, and Rotter, with his passengers, flew merrily away, either back to Germany, or in the direction of Shavli—his objective has not yet been ascertained. The unfortunate pupil had to walk all the way back to the aerodrome, in a state bordering upon nervous breakdown. It remains to be discovered by what means Rotter managed to communicate with the two Turks, and why they were allowed to wander so far afield in the charge of a solitary soldier. That such methods should be resorted to in order to effect their removal from Lithuanian custody bears out the surmise that they were persons of consideration charged with a mission of no small importance to the Soviet Republic. In lieu of the escaped Turks the Lithuanian Government gets a brand new German monoplane which, in the circumstances, is clearly forfeit.
—E. J. H.



Side View of the Junker-Limousine (160-h.p. Mercédès engine), which flew from Berlin to Shavli, Lithuania.

Electrical
Safety Locking Plug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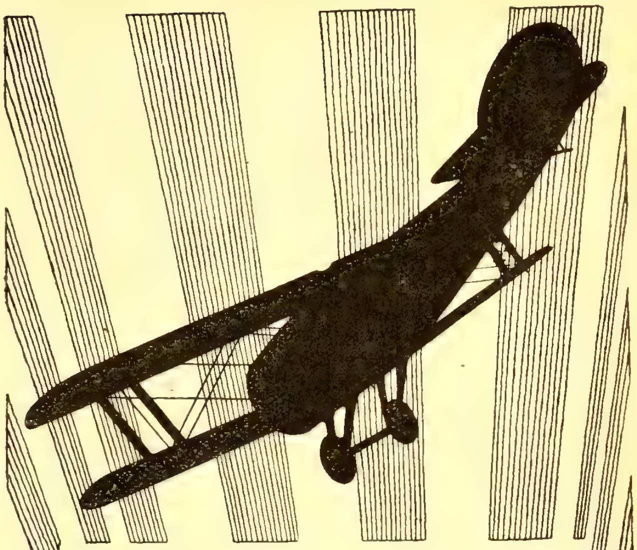

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GOLD TOP.

AVIATION DEVELOPMENTS IN AUSTRALIA,

The Australian Press have made much of the fact that eight flying squadrons returned to Australia without a single aeroplane. The only machines in the country appear to be a few D.H.6 and Maurice Farman Shorthorns, and yet there can be few places with better flying prospects than that particular "God's own country."

A reason was given that there are no hangars in Australia and that it was no use taking the machines out there only to rot in the open all day and all night. France is dotted with Bessonaux, unused and rotting, their use given to any farmers who require them. It is said not to be worth the expense of bringing them to England, where there is no sale for them. It would be worth while shipping them to Australia before they collapse, torn to shreds by the weather.

Already there are five registered Australian aviation companies: Aerial Transport, Ltd., Aerial Company, Ltd., Aerial Services, Ltd., the Australian Aircraft and Engineering Co., and the Larkin-Sopwith Aviation Co., Ltd. There are also several smaller firms composed of collections of ex-Air Force or Aus. F. Corps pilots. These concerns mostly have one or two D.H.6 machines and are simply out to give short flights with passengers.

AERIAL TRANSPORT, LTD.

A company under the above name was formed and registered in the spring of this year by Major Lee Murray (ex-R.A.F.) and Mr. H. Sleeman. The ambitious programme of this company, which includes the linking up of all the large cities in Australia by aerial services, was given in the issue of THE AEROPLANE dated Sept. 24th.

Major Murray completed a survey of the Melbourne-Adelaide route on July 22nd by motor-car. Five landing-sites were selected. On July 29th he started on a survey of the Melbourne-Sydney route.

Sydney was reached on Aug. 10th, and an official welcome was given by the New South Wales Section of the Australian Aero Club. The return journey to Melbourne was started on Aug. 19th, and the survey was completed on Aug. 23rd.

AERIAL COMPANY, LTD.

This company was registered at Sydney on April 16th of this year. It has adopted the shorter title of A.C.L. and is capitalised at £20,000 in £1 shares. Some of the objects of the company as detailed in its prospectus are:—

(1) To give pleasure, commercial, advertising and exhibition flights; (2) to establish an instructional school in aviation to be conducted on lines similar to the military aviation school at Hendon; (3) to establish branches in country centres.

The whole of the capital has been subscribed privately. The managing director is Lieut.-Col. Percy Woods, D.S.O., M.C., and the chairman of the directors is Mr. H. C. Macfie, F.C.P.A., F.C.I.S.

Two D.H.6 machines were bought from the Central Flying School, Point Cook, Victoria, after the auction sale. These machines were piloted by Capt. P. G. Taylor, M.C., R.A.F., and Flight-Lieut. R. F. Oakes, A.F.C., from the Central Flying School to Sydney. The actual flying time of one of the machines was only 9¾ hours, but they started on March 31st and did not reach Victoria Park, Sydney, until April 8th.

The reasons for the length of time taken on the flight were that those D.H.6 machines had only petrol capacity for two hours, and that they carried a totally inadequate tool kit, with no spare parts of any description. Great difficulty was encountered at times in gaining sufficient height to cross the ranges of mountains; adverse winds were encountered, and in one part of the trip the machines only travelled a distance of four miles in 25 minutes. The engines also gave trouble and had to be overhauled and repaired several times on the journey.

On Aug. 6th a flight was made on one of the D.H.6 machines from Richmond to Bathurst. The pilot was Lieut. C. V. Ryrie, who was accompanied by Lieut. N. P. H. Neal, M.C., M.M. The pilot considers a flight across the mountains very difficult and should not be attempted at a height less than 10,000 ft.

Mr. H. C. Macfie, the chairman of the Aerial Company, Ltd., sailed for England late in August. He is at present in England and buying machines to take back with him to Australia.

AERIAL SERVICES, LTD.

The object of this company is to create aerial services between London and Sydney. A survey party left Sydney on Sept. 31st last on motor-cycles and crossed the Continent of Australia from south to north. No real hardships were suffered, as the arrangements for the trip had been very well made.

Addresses were given at most of the centres en route where the pathfinders were entertained. The occupants of the various towns visited were greatly impressed by the thought that they would have an aerial service which would bring them nearer to civilisation

A series of land relay and fuel stations have been mapped out at suitable distances, and contracts have been completed and partly completed for ten of these stations. Four stations are in Queensland and six in the northern territory.

The survey is being continued across the Malay Archipelago. The company is to confine itself to long-distance flying.

THE AUSTRALIAN AIRCRAFT AND ENGINEERING CO.

The Australian agency for the products of A. V. Roe and Co., Ltd., has been acquired by Lieut. Nigel B. Love, A.F.C., R.A.F., of the Sydney firm of John Bridge and Co. His associates in the company are Lieut. W. J. Warneford and Mr. H. E. Broadsmith, F.R.Ae.S., who was the chief engineer and designer to A. V. Roe and Co., Ltd.

Mr. Broadsmith took over to Australia a fleet of Avro biplanes and a number of Avro seaplanes fitted with Bentley rotary engines, destined for Melbourne and Sydney.

Registration for the title of the Australian Aircraft and Engineering Co. was applied for early in July, and by that name the company will probably be known. Lieut. Warneford was expected to reach Sydney in September in charge of the first shipment from England. Four demonstration machines were to arrive, in addition to twenty two-seaters, mostly of the standard Avro K504 type. Erecting workshops were to be established in Sydney, where the machines were to be reassembled.

Lieut. Love has stated that the object of the company is to establish aviation on a commercial basis in Australia, and that the programme would include short passenger flights. Operations were due to start in October and were to be confined to New South Wales, Victoria, and Tasmania. It was proposed to lay out aerodromes at Sydney and Melbourne and probably a third at Hobart.

THE LARKIN-SOPWITH AVIATION CO., LTD.

Capt. Herbert J. Larkin, D.F.C. (ex-R.A.F.), the general manager of the above-named Australasian company, reached Melbourne from Great Britain by steamship on July 25th. The object of the company is to assist aerial transport companies in the formation and maintenance of their passenger services. All spares and accessories for aviation will be stocked. They are producing a light portable hangar which can be carried in a single-seater machine.

Several Sopwith machines have been or are to be shipped to Australia, including a "Dove," a "Gnu," a "Transport," and an instructional machine. The headquarters of the company are at Melbourne. A London office has been opened at No. 4, St. Mary Axe, E.C.

SMALLER AVIATION CONCERNS.

Two of the D.H.6 aeroplanes offered for sale at the Central School of Flying were purchased jointly by three returned officers of the Australian Flying Corps—Capt. E. J. Jones, M.C., D.F.C., Capt. R. W. McKenzie, M.C., and Capt. S. G. Brearley, D.F.C. The machines were overhauled at the flying school and were to be flown to Hamilton, Victoria, the headquarters of the owners. They were to be used for short passenger and advertising flights over the western district.

A commercial flight from Melbourne to Bendigo was made on July 18th in one of the six 80-h.p. Maurice Farman Shorthorns recently bought at the Central Flying School by the Carey-Fenton Syndicate. Mr. Grahame Carey piloted the machine and carried as passenger the foreign sales representative of the Dodge Automobile Co., Ltd. The return journey of 202 miles was completed in 187 minutes.

Another D.H.6 was purchased from the same source by Lieut. H. Treloar, A.F.C. This machine will be similarly employed over the territory north of the Victoria railway line between Serviceton and Arrarat. Lieut. Treloar's headquarters will be at Bendigo. Arrangements have been made with the Jones-McKenzie partnership whereby the "territory" will be equally divided between the two concerns. Lieut. Treloar has been piloting a Maurice Farman Shorthorn owned by the Carey-Fenton "Joy-riding" Syndicate.

Major Norman Brearley, D.S.O., M.C., A.F.C. (ex-R.A.F.), returned to Australia in July. Before leaving England he purchased two Avro aeroplanes, which were landed in August at Fremantle and were erected near by. The machines were used for passenger carrying and exhibition flights. The first was made on Aug. 2nd, when the Mayor of Perth was taken up.

Ten-minute flights over the city of Perth were advertised at a cost of £5 per head, and so keen was the competition that it was decided to sell the first flight by auction. Despite occasional heavy falls of rain, some 4,000 spectators gathered on the Cricket Ground to see the flights on the first day. Many passengers were carried, and exhibition flights were given by Major Brearley.

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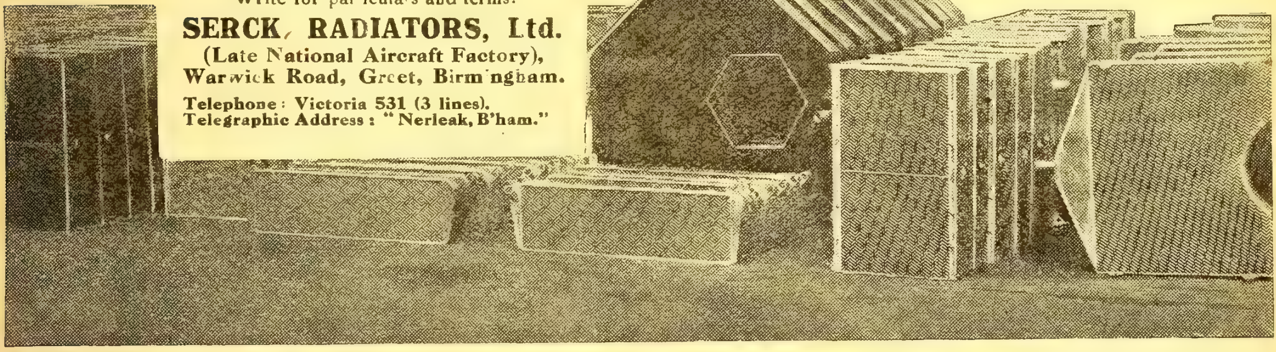

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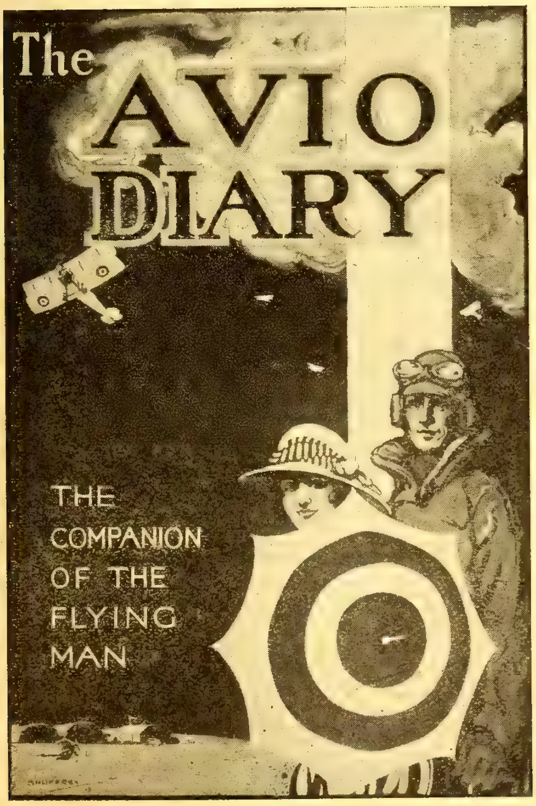
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A second exhibition of flying was given on Aug. 4th, when leaflets were dropped. Five passengers were taken up on Aug. 7th, and fourteen more on the following day. More flights were made on Aug. 9th and 16th.

Major Brearley proposes to establish a passenger and mail service between Perth and Kalgoorlie. He is also going to teach flying.

Captain H. G. Butler, A.F.C. (ex-R.A.F.), is the agent in Australia for Cellon, Ltd. His first exhibition flight on returning to South Australia was held at Unley Oval on July 23rd, in aid of the Repatriation Fund. His machine was a Bristol monoplane (110-h.p. Le Rhone engine).

On Aug. 6th he flew from Adelaide to his home in Minlaton on the York Peninsular. About a thousand spectators managed to find Conrad's Estate in the Enfield district, from where the flight started, although the locality had not been divulged. His Excellency the Governor (Sir Henry Galway) and the Chief Justice (Sir George Murray) were present.

The machine left the ground at 10.40 p.m. in good weather, with a fresh westerly wind, and carried some 4,000 postcards and many papers. On arrival at Minlaton he circled round for a while and then landed 60 minutes after he had left Adelaide, 65 miles away. About 35 miles of the journey was over the sea.

On Sept. 16th Capt. Butler gave an aviation display over Port Adelaide, Glenelg and district, dropping Peace Loan messages for the opening of the Peace Loan Campaign.

THE AUSTRALIAN AERO CLUB.

At a general meeting held in Sydney on July 15th a letter was read from the hon. sec. of the club at Melbourne stating that a resolution had been passed that the Melbourne Club in future should be known as the Australian Aero Club, Victoria Section, and that the branch formed in Sydney should be known as the Australian Aero Club, New South Wales Section.

A Central Committee, consisting of the general secretary and two members of each State Committee, will govern all sections of the club. The following were appointed office-bearers :—

General Secretary.—Mr. Hector Sleeman.

Victorian Members.—Major W. J. Sheldon, commanding the Central Flying School, Point Cook; Capt. F. H. McNamara, V.C.

New South Wales Members.—Capt. H. Gilles Watson, D.F.C., and Mr. Edward J. Hart.

The honorary secretary, who is the managing editor of the Australian monthly magazine, "Sea, Land, and Air," said that he would go to Melbourne for the purpose of interviewing Major-Gen J. G. Legge, C.M.G., C.B.

A general meeting of the New South Wales section was held at Sydney on Aug. 18th, Mr. H. C. Macfie presiding.

Mr. Reginald Lloyd, the managing director of Aerial Services, Ltd., detailed his survey from Sydney to Darwin. Major Lee Murray urged that the State Governments should be worried until they ratified the Air Navigation Regulations.

Mr. Hector Sleeman, the managing director of Aerial Transport Ltd., opposed the proposed duty of 20 per cent. on imported aero engines. Capt. P. G. Taylor, M.C. (ex-R.A.F.), described his flight from Melbourne to Sydney.

Mr. V. B. Madden of the Vacuum Oil Company stated that an aviation spirit was to be put on the Australian market very shortly. Mr. W. E. Hart said he had been instrumental, eight years ago, in getting the Customs Duty on imported aircraft removed.

It was resolved that in future the general meeting be held on the third Monday of each month.

THE AUSTRALIAN AIR FORCE.

Regarding the selection of returned officers and men for the Australian Air Force, the undermentioned wing and squadron commanders of the Australian Flying Corps have been invited to form a Selection Committee for the Australian Air Force :—

Lieut.-Col. W. Oswald Watt, O.B.E.; Major W. H. Anderson,, D.F.C.; Major A. H. Jones, M.C., D.F.C.; Major R. S. Brown; Major A. W. L. Ellis, M.C.; Major S. W. Addison; Major R. C. Phillipps, M.C., D.F.C ; and Major W. J. Sheldon.

CIVIL FLYING IN CANADA.

Very little civil flying has ever been done in Canada. The majority of the inhabitants of that vast country have never seen an aeroplane. Although regular flying services have been proposed, planned or started in every large civilised country in the world during this year, nothing has been heard of any flying being done on a large scale in Canada by Canadians.

An aeroplane survey was taken of the Labrador forests and yielded very good results. Two American training machines have been taking up passengers for short flights over Vancouver Island. An ex-R.A.F. officer hopes to start pleasure flying to the Thousand Islands next year. The machines entered for the Transatlantic flight congregated at Newfoundland, but that is no credit to Canada; they were only assembled there because it was the nearest point to Great Britain and Ireland.

There is a Canadian Aero Club, so why this terrible stagnation in a country which would be very insulted if called backward, behind the times, regressive? The Canadian Aero Club appears to have done very little, in fact nothing. Of course, it is allied to the Royal Aero Club of this country. Sleeping partners!

It is said that the Canadian Aero Club is greatly influenced by American financial magnates. If so, where are the Yankee "hustle" methods? Or have they taken control merely to block pro-British aeronautical propaganda?

The R.A.F. pilots and observers who have returned to Canada are in proportion to the population of one to every thousand—by far the highest proportion of any country in the world—and yet they can do little with aviation, because there is none. And so they have drifted and are drifting back to commonplace civil life.

At last some of the most distinguished aviators in Canada, being entirely dissatisfied with the Aero Club, have made a move in the right direction.

In Toronto, on Oct. 2nd, some eighty flying-men met together at the Central Y.M.C.A. for a dinner, and decided to form an association to be known as the "Canadian Flying Club."

The following is extracted from the Toronto "Globe" of Oct. 3rd : Among the number present were Lieut.-Col. Barker, V.C., Major A. M. Shook, Major E. G. Joy, and others of the most distinguished aviators in the Canadian or British Service.

The objects of the new association will be to give information on everything connected with flying to returned aviators, to help them keep in touch with civilian flying, and to give the member an opportunity, as far as possible, "to keep his hand in," and thus constitute a national Air Force Reserve. The promoters of the society hope in the near future that they will, as a club, be able to obtain an aerodrome. Machines will be available for the use of the members, many of whom otherwise would not be able to keep in training. The general idea of the founders is that in this way they can best further aviation interests in Canada.

Major Shook presided, and in the course of his remarks the Aero Club came in for sharp criticism for its alleged failure to meet the requirements of the returned fliers.

A committee of sixteen was elected to draw up a constitution.

From the members of the committee Col. Barker was elected president and Capt. A. G. Mackay treasurer.

A SECLUDED LIFE.

The English would hardly think of looking for the most advantageous position for a villa in an impenetrable jungle "connecting up low land containing water," but apparently Americans like seclusion and find that aeroplanes help them to find inaccessible places in which to build their villas. This explains the following :—

"William Van Alen, of the firm of Severance and Van Alen, New York architects, and Pentz, Van Alen and Durkee, makers of the Pentz airplane compass, while at his office in Palm Beach, this past season, was called upon by a client to select the most advantageous position for the location of a new villa.

"The property, extending from the Ocean to Lake Worth, comprises some twenty acres, and at the present time is practically impenetrable on account of the jungle which runs through it, connecting up some low land containing water, which requires filling in. The contract road bisects the property, and the runways through the jungle not far distant from the property did not afford a sufficient point of advantage to determine the contour of the property, which had to be obtained before Mr. Van Alen could start on the layout of the architectural features.

"His experience recently in connection with certain war work required him to make several flights in airplanes, and in consequence the advantage of using an airplane for the obtaining of this information appealed to him at once. He immediately crossed the lake to West Palm Beach and succeeded in having Mr. Kantner, the pilot at the aerodrome, take him up, and they flew together over the property until Mr. Van Alen had obtained the information he sought."

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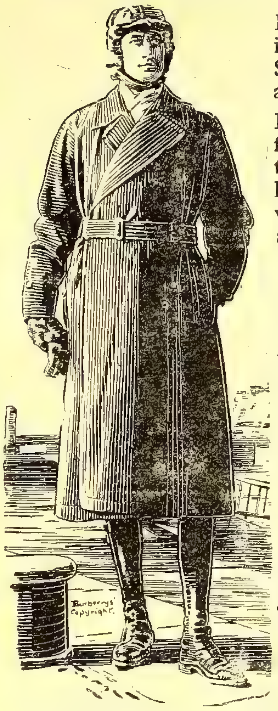

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AVIATION IN EGYPT.

FROM THE "EGYPTIAN MAIL."

In may parts of the Empire where the climatic conditions are suitable, it is possible to introduce services that could operate successfully and regularly as soon as the machines and the ground organisation are available. It would seem advisable from an aeroplane point of view to develop services over land routes, leaving long-distance trans-ocean traffic to the rigid airship. While it is impossible for a Government to develop a long-distance service as, for example, to Australia, it is practically outside the region of possibilities for a private firm to undertake at present a service of this nature as a profitable venture.

THE INITIAL COST.

The cost of transit of the necessary oil, petrol, consumable stores, spare parts, and the provision of sheds, aerodromes, machinery and mechanics at the necessary intervals would be a costly work. If, however, Egypt, India, and Australia developed commercial aviation within their own borders on such a scale that aeronautical supplies could be largely dealt in as articles of commerce in those countries, then the maintenance of the stations between those countries becomes much more simple and less costly and brings it within the range of possibility for private enterprise to operate an air service.

It would therefore seem that we should help, by all the means in our power at the present time, the local development of commercial aeroplanes in these overseas countries. Very many war-type machines, with slight modification, are suitable for this pioneer work. While this local work is proceeding we can push on with the construction of types that will be suitable to link up these great Dependencies with practically regular air services.

THE FLIGHT HABIT.

Our aim should be to make it easy for people in those overseas countries to acquire the "flight habit." It is this "flight habit" that will create the demand for local flying, and that demand will soon grow into a call for longer distance services as the public realise the speed and time saving possibilities of air travel. Both India and Egypt offer very wide possibilities for aeronautical development, the East is particularly suitable for flying from a climate point of view, and the existing land and sea communications both internally and externally leave much to be desired. An investigation into railway time-table speeds show how great would be the saving of time which the aeroplane could achieve for urgent needs.

The Governments of these countries could greatly assist matters by seriously tackling the transportation of mails by air. This action would be of immense value in speeding-up aerial development in these countries and focus the attention of business men on the future possibilities of the air. During the recent disturbances in Egypt seaplanes constructed for war service were successfully used daily for three or four weeks over distances of 100 or more miles to maintain communications when the existing railway and telephone services had been broken. The machines operated successfully throughout the periods of distress, running regularly to scheduled time, proving the inestimable value of air communications; and the Egyptian and Indian Governments would be well advised to take in hand seriously the movement by air of fast mail matter.

In England the growth of the flight habit has already commenced. During the recent spell of fine weather flying has taken place daily without intermission for three weeks at Blackpool and Southport, over a thousand flights per week being given, and a steady demand for long-distance flights was immediately noted. A Manchester-Blackpool service has been running twice daily, despite heavy mists at Manchester on several occasions.

AERIAL MAIL SERVICE.

As an indication of the possibilities of using aeroplanes for mail-carrying, it is reported that the two war squadrons operating the Air Ministry mail service between Folkestone and Cologne, a distance of about three hundred miles, carried between March 1st and April 26th last more than 1,600 bags of mails. During that time the weather on ten days was too bad for flying, the inclement conditions during March being exceptional even for England. During the remaining 47 days of the period, these squadrons made 289 flights, regularity of service that is of great credit to the Air Ministry and the squadrons concerned. One may add that the service is continual and regular during the spells of favourable weather now being experienced. With such suitable climatic conditions existing in many of our overseas Dominions, and given a similar excellent organisation as effected by the Air Ministry in this Folkestone-Cologne service, regular mail services could be instituted in these overseas countries.

GOVERNMENT AID.

The Government hold vast stocks of aeroplanes that could readily be made suitable for this work, and it was suggested that on the declaration of peace, the Government would be well advised to dispose of their surplus machines, in addition to those already promised as gifts, at a nominal figure for home services, and for those great Dependencies who provided the Mother Country with such excellent fighting men. There are some hundreds of thoroughly trained and efficient overseas air pilots, who would be magnificent material to man these air mail services.

It is understood that the Air Ministry are organising an air service between Cairo and Karachi. This is probably the most difficult part of the England-to-Australia route to organise from the ground and supply point of view, and the Ministry are to be congratulated in attacking the hardest part of the problem. It must be remembered, however, that the amount voted by Parliament for civil aviation is not considerable, and in view of the national financial position the Ministry will, of necessity, be very greatly reduced in comparison with its size and activities in the past. It can, however, by disposing of its surplus machines in the direction indicated, at a nominal figure, make it possible for the "flight habit" to be acquired by people who will, by reason of their knowledge of air flying, create a demand that will enable private enterprise to provide the long-distance services. With the exception of a few obsolete single-seater types, suitable for fighting only, it should not be necessary for the Government to break up any machines.

TO FLYING-BOAT ENTHUSIATS.

Those who are at all interested in flying-boats, and especially those who have served with the big-boat squadrons on the East Coast, will probably be glad to know that an extraordinarily fine autotype engraving has been published of Mr. C. E. Turner's Academy picture, "The Channel Patrol: An F.2 Flying-Boat Taking Off."

The drawing of the boat is almost photographic in its accuracy. The picture is full of life and gives one a splendid impression of one of these huge boats crashing through the tops of the waves just before leaving the water.

The reproduction is splendidly done and the print—which measures 15 in. by 8½ in. without the mount—is in itself a work of art. The prints are published at one guinea each by the Autotype Fine Art Co., Ltd., 74, New Oxford Street, W.C.

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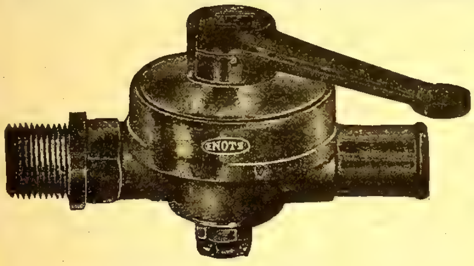

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AIRCRAFT IN PARLIAMENT

Dec 18th—The following written answer was given :—

KENLEY AERODROME.

Sir STUART COATS asked the Under Secretary of State to the Air Ministry whether, in view of the danger to aviators landing at the Kenley Aerodrome on account of its exceptional altitude and liability to be enveloped in clouds and fog, as instanced by the recent fatal accident near Caterham, and also in view of the annoyance caused to the residents of the district by the noise of arriving and departing aeroplanes, he will consider the permanent abandonment of the site and the restoration of the common, so far as may be possible, to its original condition ?

Mr. CHURCHILL : The situation of this aerodrome, on which a large amount of money has been spent, renders it of great importance in connection with the Air Defences of London, and it is considered desirable that it should, therefore, be retained as a permanent station by the Royal Air Force. The advantages and disadvantages of the prevailing atmospheric conditions at Kenley were fully considered at the time when this decision was taken.

* * *

Dec. 22nd :—The following oral answers were given :—

AIRSHIPS (COMMERCIAL PURPOSES).

Major Sir B. FALLE asked the Prime Minister if he was aware that the R.34 and R.39, the two latest rigid airships, are to be sold for commercial purposes; and if he will allow one of them to be retained for the use of the Indian Government on the North-West-Frontier of India.

Mr. BONAR LAW : The answer to the first part of the question is in the negative. I am making inquiries in regard to the suggestion in the last part of the question.

DOUGLAS-PENNANT INQUIRY.

Sir J. BUTCHER asked the Prime Minister whether he would reconsider the present system under which the House of Lords were able to appoint Committees of Inquiry against the wishes of the Government and of the House of Commons, as in the Douglas-Pennant case, and thereby to incur large expenditure and throw heavy burdens on the public purse.

Mr. BONAR LAW : As I stated on Dec. 10th last this raises a very big constitutional question, and I do not think it is possible to deal with it by question and answer.

* * *

Dec. 23rd :—

AIR ESTIMATES.

Before the adjournment of the House Major Glynn asked a question of the Leader of the House in view of the importance of a reply which he received from the Secretary of State for War.

The question was :—"To ask the Secretary of State for War whether the memorandum by the Chief of the Air Staff issued with the Air Estimates had received detailed consideration by and the approval of the Board of Admiralty and the Army Council; and whether it is intended to supplement the Chief of the Air Staff's memorandum with any comments passed on it by the Admiralty and the War Office in so far as those Departments are affected by the proposals contained in it."

The reply was :—"No, Sir, it was stated in the memoranda that the organisation proposed was provisional. I was anxious that it should be published in order that the House might be informed at the earliest possible moment of the general outline of the proposed permanent organisation of the Royal Air Force. Discussions are now proceeding between the Departments concerned. The financial limits of the scheme must be taken as definitely settled by the Cabinet."

Major GLYNN said that that reply showed that there was no co-ordination between the technical heads of the Air Ministry, the War Office, and the Admiralty, and asked if the terms of the memorandum by the Chief of the Air Staff would remain the policy of the Government, or if fresh proposals would be considered by the Committee of Imperial Defence or the recognised experts of the Navy and Army before they were presented to the House as the settled policy of the Government.

Mr. BONAR LAW said he could not give an answer to the question without notice. The Cabinet approved of the Trenchard scheme on general grounds. The formation of a Joint Imperial Staff is receiving the attention of the Cabinet.

* * *

The following written answers were given :—

DISORDER AT HENLOW.

Mr. W. THORNE asked the Secretary of State for War if he was aware that on Sunday night, Nov. 2nd last, there was an outbreak of disorder among the Royal Air Force men at Henlow station; that whilst the disturbance was being dealt with by the non-commissioned officers a number of men concerned entered hut No. 21 whilst the proper occupants were in bed and asleep; that following the occurrence a number of the latter were picked out and charged with inciting to mutiny and other counts, and without their defence being considered were sentenced to detention at Wandsworth and loss of grade; that such punishment has caused indignation and discontent; and if he will order an inquiry into the matter with a view to justice being done to innocent men ?

Captain GUEST : The answer to the first part of the hon. gentleman's question is in the affirmative; to the second part, that the men who caused the disorder were rounded up in hut No. 21; to the third part, that these men were brought before the commanding officer, and that none of them were dealt with without their defence being considered. Four men were tried by general court martial, 11 elected to be tried by district court martial and have already been brought to trial, and the remainder were dealt with summarily. I am not aware that indignation and discontent has been caused by the way in which this outbreak has been dealt with. If the hon. Member has any reason to believe some or any of the men who were in bed and asleep have been punished unjustly and will furnish me with the names, I will have *that* matter inquired into

AEROPLANE DURABILITY.

Mr. MURCHISON asked the Secretary of State for War whether he can state the average life in flying hours under peace conditions of two-engined aeroplanes capable of carrying 20 to 30 passengers and single-engined aeroplanes carrying up to four passengers ?

Captain GUEST : The period that has elapsed since civil flying under peace conditions commenced has been insufficient to allow such reliable data to be obtained as would enable a useful answer to be given to this qeustion. The necessary data are being collected. It may, however, be observed in this connection that if the proper replacements, both of engine and aeroplane parts, are made during the periodical overhauls, there is no reason why any aeroplane should ever wear out, as after 200 hours' flying there will probably be very little of the original machine left.

OFFICERS (RANK).

Viscount WOLMER asked the Under Secretary of State to the Air Ministry whether officers of the Royal Air Force promoted to the substantive rank of major for distinguished service rendered in the war by His Majesty in the New Year Honour List have been now instructed to vacate their position in the Royal Air Force as majors, to relinquish this rank, and to report back to their old unit.

Major TRYON : Promotion in the Royal Air Force is given in respect of an officer's Royal Air Force commission and is not Army rank. The number of Air Force officers has been reduced from, approximately, 30,000 at the date of the Armistice, to about 4,000 at the present date, and consequently a large number of officers seconded to the Air Force from the Army have been returned to their units. Promotions in the Royal Air Force conferred as rewards for good service in the Air Force on officers seconded from the Army must necessarily become inoperative during the subsequent service of these officers in the Army unless they have attained equivalent rank in their parent service. The question of allowing officers, who have not then attained Army rank equivalent to their Royal Air Force rank, when they finally leave the Army to reassume their Royal Air Force rank will again be considered.

A NOVEL OF THE AIR.

OVER AND ABOVE. By J. E. Gurdon. London : Wm. Collins, Sons, and Co., Ltd. Pp. vi + 250. Price 7s. 6d.

There are some books which, while not in themselves masterpieces, bear in them the true impress of life. Each incident is related with an intimacy which seems as though it could only have been acquired by personal experience. Few of the many hundreds of war books published in the past five years have any trace of this quality or indicate with any degree of truth the mental altitude of those who had to take an active part in the recent hostilities.

"Over and Above" has this quality of truth. It is not possible to discover whether the author has himself any personal experience of the incidents he describes, but it is hard to realise how he could have written in so convincing a manner unless he had served with a flying unit.

The book describes the life of a pilot from the days of preliminary training, through the usual experiences of bombing and fighting, to the days when, having received promotion and due honours, he returns to England for other duties. The characterisation is excellent, and it is possible that the squadron whose deeds are told might be recognised by those who have a catholic knowledge of personalities in the R.F.C. and R.A.F.

The weariness of life in "Dud Weather" is well described, and there is a vivid realism in the description of an aerial fight in the chapter on the "First Hun."

The book is uniform in construction, and it is not possible to select *purpuriae panni* without doing an injustice to the rest of the work. It does not achieve greatness, but it is well above the average of war novels.

A NEW FRENCH ENTERPRISE.

The administrative and editorial departments of the new French monthly aeronautical review, "L'Air," has recently been removed to 5, Rue de l'Isly, Paris. The telephone number of the paper is Louvre 4756.

"L'Air" is striking out an entirely new line in French journalism. It has long been the lamentable custom of French papers to demand payment for editorial notices, with the result that, even in such important matters as show reports, firms which do not pay for the editorial notices of their products are either left unnoticed or, if so important that they cannot be ignored, are given only very insignificant space. "L'Air" has adopted the method prevailing among all reputable British papers in that it reviews the products of manufacturers and the doings of their products quite impartially, irrespective of whether the firms advertise or not, and under no circumstances does it ask or receive payment for matter contained in its editorial columns.

Under the presidency of M. Laurent Eynac, Parliamentary Deputy, Vice-President of the Parliamentary Aviation Group, and under the technical direction of M. Roche d'Estrez, "L'Air," is rapidly taking a foremost place among French technical journals, and its new method of doing business is bound to win it the respect and appreciation of all concerned with the French Aircraft Industry.

THE DAILY DRUDGERY OF PLEASURE.

A correspondent in Bradford writes :—

The Berkshire Aviation Company performed here during the week ending Nov. 23rd on Avros. They flitted very pleasantly over the works on several occasions and on each occasion a number of hard-worked sons of toil might have been observed gazing Heavenwards with a vacant expression, having apparently left their dearly loved work for the express purpose. However, anything which takes their minds away from the daily drudgery of backing horses and running up the cost of living is probably for their mental good.

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

Admiralty Appointments.

Admiralty, Dec. 15th.

R.M.L.I.—Maj. P. Owen returns to Corps. Duty from Secd. List (R.A.F.), and will be borne supy. to estbt. until absorbed, Dec. 15th.

Admiralty, Dec. 17th.

Lt. to be Lt.-Cmdr. :—C. J. L'Estrange Malone, M.P., Dec. 15th.

MILITARY.

War Office, Dec. 18th.

Regular Forces.—Memoranda.—The following Qrmrs. and Capts. resign their commns. on being appointed to permanent commns. in the R.A.F. :—A. Fletcher, C.M.G., C.B.E., M.C., A. H. Measures, O.B.E., W. J. Ryan, C.B.E., A. Levick, O.B.E., F. H. Unwin, O.B.E., H. W. Stratton, O.B.E., Aug. 1st.

The following Qrmrs. and Lts. resign their commns. on being appointed to permanent commns. in the R.A.F. :—J. Mead, C.B.E., M.C., W. Thomas, M.C., Aug. 1st.

Territorial Force.—Infantry.—13th Bn., Lond. R.—Qrmr. and Capt. A. Ridley resigns his commn. on transfer to R.A.F., May 23rd, 1918 (substituted for the notification which appeared in "Gazette," Oct. 9th).

War Office, Dec. 22nd.

Territorial Force.—Infantry.—4th Bn., Suff. R.—Sec. Lt. J. C. Clark to be Lt., and to remain secd. (R.A.F.), Oct. 26th, 1918.

4th Bn., York and Lanc. R.—Sec. Lt. B. S. B. Baylis to be Lt., and to remain secd. (R.A.F.), Sept. 28th, 1918.

War Office, Dec. 23rd.

Regular Forces.—R.A.S.C.—Temp. Capt. H. F. Melville, R.A.F., to be temp. Lt., Sept. 25th.

AIR FORCE.

Air Ministry, Dec. 19th.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Dec. 19th. They will retain their seny. in the substantive rank last held by them prior to the grant of the short service commn.

In the case of officers now gazetted Flying Officer or Observer Officer from Pilot Officer, seny. will date from the date of "Gazette" :—

Flight Lt.—F. J. Watts (A.).

Flying Officers.—J. L. Bernard (A.), E. J. A. Burke (A.), R. J. Copley (T.), J. S. Griffith, D.F.C. (A.), H. L. P. Lester (A.), H. E. Ranson (A.), C. B. Waters (A.).

Observer Officers.—D. Craik, J. E. Truss.

Flying Officers (from Pilot Officers).—R. B. Dormor (T.), H. J. Gye (A.), S. J. Mason (A.), C. McC. Vincent (A.), S. N. Webster (A.), L. Whitfield (A.).

Observer Officers (from Pilot Officers).—E. Cuthbert, S. P. B. de Moyse-Bucknall, M. St. J. Ross, J. S. F. Watson.

The notifications appearing in the London "Gazettes" of the dates indicated below, appointing the following officers to short service commissions, are cancelled :—Flying Officer J. M. Russell (Ad.); Flying Officer R. L. G. Wright (A.), Sept. 12th; Flying Officer S. S. Flook, D.F.C. (A.); Flying Officer G. A. Morgan, A.F.C. (A.); Flying Officer I. C. R. Mackenzie (A.); Flying Officer F. J. W. Mellersh, A.F.C. (A.); Flying Officer G. A. Morgan, A.F.C. (A.), Oct. 24th; Flight Lt. F. J. Powell, M.C. (A.); Flying Officer J. L. Montgomery (A.), Dec. 12th.

R.A.F.—The classification of Maj. W. J. Shields is "(T.)" and not "(Ad.)" as stated in the "Gazette" of Aug. 1st.

The notification in the "Gazette" of Aug. 1st appointing the following officers to permanent commns. is cancelled :—Maj. R. H. Howell (S.O.), Capt. W. B. Lawson (A. and S.), Lt. C. M. Eastley (A.).

The notification in the "Gazette" of Aug. 22nd appointing Capt. A. S. C. MacLaren, M.C., A.F.C. (A.), to a permanent commn. is cancelled.

The notification in the "Gazette" of Oct. 28th appointing Flying Officer I. H. P. McEwen (A.) to a permanent commn. is cancelled.

The following temp. appointment is made :—

Staff Officer, 3rd Class.—(Q.) Flight Lt. T. G. Gordon, M.B.E., Dec. 12th.

Flying Branch.—Sec. Lt. L. Harrison to be Lt., May 27th.

The following Cadets are granted temp. commns. as Sec. Lts. (O.) :—175646 E. N. Howes, 176063 H. A. Thompson, Aug. 26th, 1918; 144746 J. C. Cook, 9438 T. S. Duncanson, 176676 L. W. Jones, 176685 P. H. Lewis, 177075 F. Silver, Sept. 9th, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Flying Officer K. A. Seth-Smith (Lt., Northd. Fus.), Nov. 17th; Pilot Officer (Hon. Flying Officer) E. M. Harris (Lt., R.F.A.), Dec. 1st; Flying Officer D. Hodson (Lt., 116th Mahrattas), Dec. 11th.

Sec. Lt. E. H. Fry relinquishes his commn. on ceasing to be empld., and is permitted to retain his rank, July 4th.

Lt. H. F. Nicholls, D.F.C., relinquishes his commn. on ceasing to be empld., Sept. 7th.

Transferred to unempld. list :—Sec. Lt. N. Abram, Jan. 6th (substituted for notification in "Gazette," Jan. 24th, wherein this officer's name was described as Abrams); Lt. J. O. Barclay, Jan. 8th (substituted for notification in "Gazette," Jan. 21st, wherein initials of this officer were described as J. B.); Sec. Lt. J. C. Cook, Jan. 21st; Lt. A. B. Paton, Jan. 25th; Lt. E. Wilson, Jan. 28th; Sec. Lt. V. H. Mayers, Sec. Lt. D. M. Rohrer, Sec. Lt. H. M. Ross, Feb. 1st; Sec. Lt. E. N. Howes, Feb. 5th; Sec. Lt. R. G. Sparey, Feb. 15th; Sec. Lt. A. Taylor, Feb. 16th; Sec. Lt. L. W. Jones, March 8th; Lt. B. H. Garrett, March 14th; Lt. F. G. Solis, Capt. A. Y. Wilks, March 15th; Sec. Lt. F. Silver, March 16th; Lt. R. Sykes, March 17th (substituted for notification in "Gazette," Nov. 7th); Lt. W. N. Fox, March 20th; Capt. F. C. Henderson, April 1st; Sec. Lt. P. H. Lewis, April 8th; Lt. H. A. Hewitt, April 10th; Lt. C. L. Hilborn, April 25th; Lt. M. B. Watson, May 1st; Sec. Lt. H. A. Thompson, May 6th; Sec. Lt. L. J. Murray, May 8th; Sec. Lt. J. H. Parry, May 13th; Sec. Lt. T. S. Duncanson, May 20th; Lt. C. J. Smith, June 8th; Lt. O. Green, June 9th; Sec. Lt. J. E. P. Levyns, June 14th; Lt. G. G. Williams, June 22nd (substituted for notification in "Gazette," Sept. 5th); Maj. T. D. Hallam, D.S.C., July 12th; Sec. Lt. W. R. Allin, Sept. 6th; Sec. Lt. H. F. Fisher, Sept. 9th; Sec. Lt. E. C. Brown, Sept. 12th; Lt. H. A. Cole, Lt. J. B. Dunlop, Sept. 28th; Lt. A. H. Allingham (substituted for notification in "Gazette" of Oct. 17th, wherein this officer's rank was shown as Sec. Lt.); Lt. E. A. Burn, D.F.C., Lt. G. Swannell, Sept. 29th; Sec. Lt. L. F. Copeland, Oct. 9th; Sec. Lt. F. B. Candy, Oct. 13th; Sec. Lt. C. H. Bridge, Oct. 22nd; Lt. T. L. Coates, D.F.C., Oct. 28th (substituted for notification in "Gazette" of Oct. 28th); Capt. R. Forbes-Bentley, D.S.C., Oct. 29th; Capt. J. B. Elliott, O.B.E., Nov. 4th; Sec. Lt. K. S. Eagles, Nov. 6th; Lt. J. L. Waugh, Nov. 7th; Sec. Lt. N. G. Forester, Lt. W. G. Freel, Nov. 13th; Lt. G. W. Bellin, Sec. Lt. S. C. Capes, Lt. G. C. Grundy, Nov. 18th (substituted for notification in "Gazette" of Nov. 25th); Sec. Lt. N. Main, Nov. 24th; Lt. R. G. H. Davis, Sec. Lt. G. S. Smith, Nov. 25th; Sec. Lt. T. A. Clarke, Lt. R. E. S. Ferguson, Sec. Lt. F. T. Stott, D.F.C., Lt. W. T. B. Tasker, Nov. 26th; Sec. Lt. G. R. Allport, Sec. Lt. W. Todd, Nov. 27th; Sec. Lt. S. M. Fairey, Nov. 28th; Lt. M. H. Ely, Nov. 29th; Sec. Lt. A. Birch, Lt. C. J. Thomson, Dec. 1st; Sec. Lt. E. Baden-Owen, Lt. (Hon. Capt.) P. H. Flood-Page, Dec. 2nd; Lt. J. W. Blake, Capt. J. C. Croft, Lt. G. D. Machin, D.F.C., Dec. 3rd; Sec. Lt. C. H. Alvord, Lt. I. P. Anderson, Sec. Lt. J. H. Cunningham, Sec. Lt. O. P. Gosling, Lt. W. T. Jourdan, Sec. Lt. U. Macfarlane, Sec. Lt. L. Rolland, Sec. Lt. J. G. Stitt, Lt. A. L. M. Van-der-Byl, Sec. Lt. H. Wilton-Clark, Dec. 4th; Lt. C. W. Bishenden, Sec. Lt. J. D. Bosman, Dec. 7th; Sec. Lt. L. Hollingsworth, Sec. Lt. A. J. Marshall, Dec. 9th; Sec. Lt. W. H. Little, Dec. 10th; Sec. Lt. L. F. Mead, Dec. 15th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—C. Channing (contracted on active service), Dec. 10th; A. C. Pickett (caused by wounds), Dec. 11th.

The initials of Lt. A. R. Gurney, M.C., are as now described, and not A. W., as stated in "Gazette" of April 8th.

The notification in "Gazette" of March 25th concerning Sec. Lt. A. Henderson is cancelled.

The notification in "Gazette" of June 6th concerning Lt. H. J. Gearing is cancelled.

The notification in "Gazette" of July 4th concerning Sec. Lt. E. H. Fry is cancelled.

The notification in "Gazette" of Oct. 7th concerning Lt. H. F. Nicholls, D.F.C., is cancelled.

The notification in "Gazette" of Oct. 28th concerning Lt. D. P. Davidson is cancelled (notification in "Gazette" of Dec. 2nd to stand).

The notification in "Gazette" of Dec. 9th concerning ex-Flight Lt. K. H. Riversdale-Elliott (Lt., Sco. Rif.) is cancelled.

Administrative Branch.—Sec. Lt. S. A. Hipple to be Lt., June 20th.

Pilot Officer H. Silvester to be Flying Officer, Oct. 1st.

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Wing Comdr. D. Powell, C.B.E. (Maj. (Bt. Lt.-Col.), R. Welsh Fus.), Aug. 19th; Sec. Lt. (Hon. Lt.) H. Cooper, M.C. (Lt. (temp. Capt.), R. Fus.), Oct. 20th (substituted for notification in "Gazette" of Nov. 4th); Sqdn. Ldr. P. Owen (Maj., R. Marines) relinquishes his temp. R.A.F. commn. on return to Royal Marines, Dec. 15th.

Transferred to unempld. list :—Sec. Lt. A. Henderson, Feb. 19th (substituted for notification in "Gazette," March 25th, wherein this officer was shown under Technical Branch); Lt. (Hon. Capt.) (actg. Maj.) R. E. C. Knight-Bruce, Feb. 23rd (substituted for notification in "Gazette," March 11th, wherein this officer's name was described as R. E. C. Bruce-Knight); Lt. W. H. Williams, May 9th (substituted for notification in "Gazette," Nov. 11th, wherein this officer's rank was shown as Sec. Lt.); Sec. Lt. R. H. Sheldrick, May 20th; Capt. C. I. Casey, M.C., Lt. A. E. N. Jansen, May 30th (substituted for notification in "Gazette," March 28th); Sec. Lt. G. H. Davis, Aug. 16th; Lt. (Hon. Capt.) G. H. Hill, Sept. 28th; Capt. J. W. Carter, Oct. 11th; Sec. Lt. (actg. Capt.) N. Bucknall, Oct. 24th; Capt. H. S. Edgar, Nov. 13th; Lt. J. W. C. Dick, Capt. (actg. Maj.) C. Hodgkinson-Smith, Nov. 22nd; Sec. Lt. A. J. Tutton, Nov. 24th; Sec. Lt. (Hon. Capt.) R. Alston, Sec. Lt. R. L. Raymond, Sec. Lt. E. A. Williams, Nov. 29th; Sec. Lt. L. Collins, Sec. Lt. F. McKeown, Lt. C. Ridsdale, Nov. 30th; Sec. Lt. E. Bell, Sec. Lt. F. L. Carter, Sec. Lt. W. Macpherson, Dec. 1st; Lt. A. Baird, Sec. Lt. F. C. Matten, Capt. (actg. Maj.) J. L. Walshe, Dec. 5th; Lt. F. J. Deane, Dec. 7th; Lt. J. B. Finch, Dec. 9th.

Lt. A. D. Whitehead (R. War. R.) relinquishes his commn. on account of ill-health caused by wounds, Dec. 11th.

The initials of Lt. J. V. L. Hall are as now described, and not "T." V. L., as stated in "Gazette," Oct. 15th, 1918.

The initials of Flight Lt. E. St. C. Harnett, O.B.E., are as now described, and not E. St. Harnett, as stated in "Gazette," Dec. 16th.

The notification in "Gazette," Feb. 21st, concerning Lt. (actg. Capt.) S. Ransom is cancelled.

Technical Branch.—Flying Officer W. J. Standish is graded for purposes of pay and allowances as Flight Lt. whilst empld. as Flight Lt., Grade (A.), from Aug. 8th to Sept. 11th (substituted for notification in "Gazette," Oct. 17th).

Transferred to the unempld. list :—Maj. F. T. Ashford, Feb. 27th (substituted for notification in "Gazette," April 8th, wherein this officer was shown as Lt.); Capt. J. Brown, M.B.E., M.C., Oct. 20th; Lt. H. W. Baylis, Nov. 4th; Sec. Lt. A. A. Greenwood, Nov. 5th; Sec. Lt. R. E. F. L. Bristow, Capt. H. O'Hagan, Nov. 13th; Capt. C. H. Brooke, Nov. 15th; Sec. Lt. P. V. Davies, Capt. W. Wade, O.B.E., Nov. 21st; Maj. A. R. Earle, Nov. 23rd; Sec. Lt. H. J. G. Male, Lt. A. Stocks, Nov. 24th; Sec. Lt. (Hon. Lt.) S. A. Alder, Lt. P. F. W. Bush, Nov. 25th; Lt. H. S. Lewin, Lt. R. E. Reid, Sec. Lt. F. W. Turner, Nov. 30th; Capt. W. H. Bedford, Lt. B. W. H. Carter, Sec. Lt. A. Matthews, Dec. 1st; Lt. C. L. Brown, Lt. C. F. Bushnell, Dec. 2nd; Lt. G. E. Lane, Dec. 5th; Maj. H. L. Templer, Dec. 7th.

The notification in "Gazette" of Feb. 18th concerning Lt. W. J. Walford is cancelled (notification in "Gazette" of March 28th to stand).

The notification in "Gazette" of Nov. 21st concerning Lt. E. F. L. Taylor is cancelled (notification in "Gazette" of Oct. 14th to stand).

Medical Branch.—Transferred to the unempld. list :—Lt. A. Henderson, March 11th (substituted for notification in "Gazette" of April 8th, wherein this officer was shown under Flying Branch); Capt. H. J. Orr-Ewing, April 26th.

The initials of Flight Lt. W. F. Shell are as now described, and not W. "E.," as stated in "Gazette" of Dec. 9th.

Chaplains Branch.—Transferred to the unempld. list :—Rev. K. B. Somerville, B.A., Nov. 25th; Rev. D. H. A. Williams, B.A., Dec. 4th.

W.R.A.F.—Mrs. F. Day relinquishes her appt. on completion of service, Oct. 18th (substituted for notification in "Gazette" of Dec. 5th).

Memoranda.—Sec. Lt. D. B. Gunn to be Lt., July 16th.

Capt. C. W. Wise, O.B.E., M.C. (Capt., R.A.S.C., S.R.), relinquishes his commn. on ceasing to be empld., May 6th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld. :—T. B. Ringwood, March 25th; A. H. Simmonds, Sept. 16th; W. Williamson, Oct. 16th.

Transferred to the unempld. list :—Lt. (actg. Capt.) T. Jones, from (S.O.), Feb. 13th; Lt. C. G. Turpin, from (S.O.), Nov. 30th; Lt. R. W. Ward, from (S.O.), Dec. 2nd; Sec. Lt. M. B. Baker, from (S.O.), Dec. 4th; Capt. C. J. Marchant, M.C., from (S.O.), Dec. 11th.

The notification in the "Gazette" of Nov. 28th concerning Temp. Hon. Lt. L. J. Hill is cancelled.

Air Ministry, Dec. 22nd.

The King has given orders for the following appointments in recognition of distinguished services rendered during the war :—

C.B. (Military Division).

Wing Comdr. (actg. Group Capt.) B. H. O. Armstrong, C.M.G., R.A.F. (R.E.).

C.M.G.

Wing Comdr. F. W. Bowhill, D.S.O., R.A.F. (S. Russia).

C.B.E. (Military Division).

Sqdn. Ldr. (actg. Wing Comdr.) R. J. Bone, D.S.O. (N. Russia).

O.B.E. (Military Divisioni

Miss R. Balmer, M.B., Hon. Capt., R.A.F.M.S.; Flying Officer (A./Sqdn. Ldr.) A. D. Carey (N. Russia); Mrs. J Christmas, Asst. Adminr. (A./Dep. Adminr.), W.R.A.F.; Flt. Lt. E. A. de Lossy de Ville (S. Russia); Flt. Lt. A. S. C. MacLaren, M.C., A.F.C.; Flt. Lt. R. L. Roe, M.B. (R.A.M.C.) (Mediterranean Area).

M.B.E. (Military Division).

Flying Officer W. Batcheldor (T.F., Gen List) (France); P.O. (A./Flt. Lt.) W. Borland (S. Russia); Flying Officer N. G. Fraser, A.F.C., and Flying Officer S. J. Gardiner (N. Russia); Flying Officer W. H. Hoile (S. Russia); Pilot Officer A. Jukes and Flying Officer A. F. Lang (N. Russia); Sec. Lt. G. Moore (I. Force) (France); P.O. (A./Flt. Lt.) J. W. Tattersall (N. Russia); Flt. Lt. A. M. Thomas (Can. F.A.) (France and Canada); Flying Officer G G. Tomling, M.C., Sec. Lt. D. E. Williams, and Flying Officer J. W. Young (S. Russia).

The King has approved of the following rewards to officers and other ranks of the R.A.F. in recognition of distinguished services rendered during the war and since the close of hostilities. (See footnote) :—

Distinguished Service Order.

Sqdn. Ldr. L. Tomkinson, A.F.C. (N. Russia).

Bar to Distinguished Flying Cross.

Flying Officer O. R. Gayford, D.F.C., Flt. Lt. J. W. B. Grigson, D.F.C., and Flying Officer B. G. H. Keymer, D.F.C. (S. Russia); Flying Officer T. M. Williams, M.C., D.F.C. (Baltic).

Distinguished Flying Cross.

Flt. Lt. W. R. D. Acland, A.F.C. (Baltic); Pilot Officer A. F. Adams (N. Russia); Pilot Officer J. L. Airey and Flying Officer F. R. Bicknell (S. Russia); Flying Officer H. C. E. Bockett-Pugh (N. Russia); Flt. Lt. D. G. Donald, A.F.C. (Baltic); Flt. Lt. D. S. Earp and Pilot Officer F. W Foster, D.S.M. (N. Russia); Pilot Officer M. Goddard (S. Russia); Flying Officer L. M. Hilton and Pilot Officer J. S. Hunt (N. Russia); Pilot Officer W. W. Langdon and Flying Officer M. J. Langley (S. Russia); Pilot Officer G. Lansdowne (N. Russia); Lt. W. S. Philcox (France); Pilot Officer J. W. Ravenscroft (S. Russia); Pilot Officer A. J. Redman and Pilot Officer (Hon. Flt. Officer) G. G. Ross-Smith (N. Russia); Pilot Officer H. G. Thompson (S. Russia); Pilot Officer L. Timmons and Flt. Officer (A./Flt. Lt.) G. N. Trace (N. Russia); Observer Officer F. A. Whippey (Baltic).

Air Force Cross.

Flying Officer F. L. Barnard; Lt. A. C. Campbell-Orde; Lt. H. W. Chattaway; Wing Comdr. G. W. P. Dawes, D.S.O. (R. Berks R.); Pilot Officer R. F. Durrant; Maj. E. L. M. Leveson-Gower; Flying Officer R. Halley, D.F.C.; Flying Officer (A./Flt. Lt.) W. R. S. Humphreys (N. Russia); Flt. Lt. (A./Sqdn. Ldr.) J. E. M. Pritchard, O.B.E.; Flying Officer P. D. Robins; Wing Comdr. C. W. Wilson, M.C.

Royal Red Cross (Class I).

Chief Sect. Ldr. Miss A. Pounder, W.R.A.F. (Nursing Serv.).

Distinguished Flying Medal.

204181 Actg. Serjt. E. O'N. Bearden, A.F.M. (S. Russia)

Air Force Medal.

122685 Serjt. T. Brown (Rigger); 213571 Actg Serjt. W. A Crockett (Fitter); 634 Flt. Serjt. A. E. Smith (Fitter).

Meritorious Service Medal.

219490 L.A.C. J. E. Alcock (S. Russia); 40562c A./M.2 R. C. Ashton (N. Russia); 26805 Serjt. H. C. Ashwell (Palestine); 402380 Serjt. C. E. Barker; 314127 Ldg. Mech O. Bridger; 202020 S./M. 2 J. T. Brown and 212659 Serjt. J. Calderwood (N. Russia); 207122 Serjt. E. A Cambridge (S. Russia); 253969 Cpl. H. Coulson; 165587 A./Cpl. H. J. Cox; 211401 Flt. Serjt. W. T. David; 277178 A./C. 1 (A./Cpl.) D. Duckworth; 39537 L.A.C. E. Eldridge; 208168 Cpl. W. G. Funnell; 406533 Cpl. G. L. Harris; 200091 Serjt. A. Hellinger, 242438 A./C. 2 (A./Cpl.) C. A. Kay; 206375 Flt. Serjt. A. S. Knight; 78259 A./S. C. F. Mann; 52215 L.A.C. A. L. Millard; 264628 Cpl. (A./Serjt.) F. D. Moulang; 25431 Serjt. S. H. Muir; 186965 Cpl. C. New; 161230 A.C. 1 R. J. Pullen and 200730 Serjt. W. H. W. Quantrell (N. Russia); 212187 Serjt. W. Tickle (S. Russia); 204128 Serjt. F. Tilley; 203615 Serjt. C. H. Winchester; and 461 Ch./M. Mech. J. Young (N. Russia)

Mentioned in Dispatches.

The following officers and other ranks of the R.A.F. have been mentioned in Dispatches and Reports for distinguished services overseas :—

Sqdn. Ldr. (A./Wing Comdr.) R. J. Bone, D.S.O.; Pilot Officer B. G. Blampied, Observer Officer C. G. Bloomer, and Pilot Officer C. S. Booth (N. Russia); Pilot Officer (Observer) L. J. Booth and Flt. Lt. C. Boumphrey (Baltic); Wing Comdr. F. W. Bowhill, D.S.O. (S. Russia); Pilot Officer W. G. Boyd (N. Russia): Flying Officer E. Brewerton (Baltic); Pilot Officer C. H. Bridge (N. Russia); Pilot Officer F. Buchanan and Pilot Officer T. Burton (S. Russia); Pilot Officer C. M. Byham (N. Russia).

Pilot Officer (Observer) L. J. Chandler (Baltic), Flying Officer W. R Collins, and Flying Officer W. S. J. H. Coney (D.C.L.I.) (N. Russia).

Flying (Officer V .M. C. B. De Sarigny and Pilot Officer H D. Diggle (N. Russia).

Flt. Lt. A. W. Fletcher, A.F.C., and Flying Officer J. MacG. Fairweather (Baltic); Pilot Officer L. Freeborn, M.B.E. (S. Russia).

Flt. Lt. E. S. Goodwin, A.F.C. (N. Russia); Flt. Lt. K. B. S. Greig (S. Russia); Sqdn. Ldr. (A./Wing Comdr.) R. Grey, D.S.O. (Capt., Gren. Gds.) (N. Russia).

Pilot Officer (Hon. Flt. Lt.) H. M. P. Hewett (1st Dgns.) (Baltic); Flying Officer L. C. Hooton, M.C. (N. Russia); Flying Officer J. W. Hoskings, M.B.E. (S. Russia).

Flying Officer J. C. A. Jenks (N Russia); Pilot Officer (Observer) F. C. Jenner (Baltic); Pilot Officer W. H. Jinman (N. Russia); Pilot Officer T. P. T. Jones (N. Russia).

Pilot Officer L. H. Kemp (S. Russia); Flying Officer L. D. Kirk (7th Seaf. Highrs.) Pilot 100th Sqdn., Indept. Force (France); Flt. Lt. W. C. Knight (K. Bns.) (S. Russia).

Flt. Lt. G. E. Livock, D.F.C. (N. Russia); Pilot Officer (Observer) A. Lees (Baltic); Flying Officer N. S. Lott (N. Russia).

Flt. Lt. A. W. MacIlwaine, Flt. Lt. J. A. McNab, Flying Officer L. Martin, and Pilot Officer M. M. Miln (N. Russia); Pilot Officer R. G. K. Morrison (S. Russia).

Pilot Officer J. Noonan, D.S.M. (N. Russia).

Flying Officer H. N. O'Donnell (N. Russia).

Flt. Lt. E. Parker (S. Russia); Pilot Officer (Hon. Flt. Officer) W. D. Potter (N. Russia); Flying Officer H. G. Pratt and Flying Officer N. G. Pring (S. Russia); Pilot Officer J S. Prowse (N. Russia); Flt. Lt. E. P. Punch (N. Russia—Med. Officer).

Pilot Officer L. Radford (N. Russia); Flt. Lt. A. C. Randall, D.F.C. (Baltic); Observer Officer W. Richards, 100th Sqdn., I. Force (France); Flying Officer N. M. S. Russell (N. Russia).

Flt. Lt. J. A. Sadler (S. Russia); Flying Officer W. Sanderson, A.F.C., Sec. Lt. J. Sewell, Pilot Officer (Hon. Flt. Officer) D. Sinclair, Pilot Officer E. Smith, Pilot Officer J. G. Smithson, Flt. Lt. N. G. Stewart-Dawson, D.S.O. (N. Russia).

Flying Officer J. T. Thursfield, Sqdn. Ldr. L. Tomkinson, A.F.C., Flying Officer R. M. Trevethan, M.C., and Flying Officer J. T. M. Tylden-Wright (3rd Hrs.) (N. Russia).

Pilot Officer (Observer) W. S. J. Waine (Baltic); Flt. Officer (Hon. Flt. Lt.) C. L. Wauchope (Northants R.) (N. Russia).

59452 Serjt. F. S. Anstey (N. Russia); 285763 A./C. 2 J. Ashbridge (S. Russia).

211587 Serjt. J. Bailey (S. Russia); 1357 Actg. S./M. J. Barrett, A.F.M. (N. Russia); 208103 Cpl. J. Bennett (S. Russia); 237295 L.A.C. C. H. Bosworth, 160089 A./C. 2 M. Bowley, 82659 A./C. 2 W. T. Burniston (N. Russia).

193789 A./M. 3 J. E. S. Cameron, 6882 S./M. 1 R. J. Campkin, 22839 Cpl. R. T. M. Clayton, 5092 Serjt. L. Coldrick, and 329888 A./Cpl. J. P. Curry (N. Russia).

242543 Cpl. R. H. Dealtry (S. Russia).

193765 A./M. 3 A. F. Emerson (N. Russia).

110500 L.A.C. L. Gale, 401912 Cpl. R. Gardiner, 202159 Q.M./Serjt. R. J. Glen, 187527 A./C. 2 W. R. Gouge (N. Russia).

401432 L.A.C. F. J. Hamm (N. Russia); 103358 A./M. 2 R. D. Harmer (S. Russia)

40447 A./C. 1 C. Jeavons (N. Russia).

235684 Cpl. L. J. Keen (S. Russia).

89809 A./C. 2 H. S. Meech (N. Russia).

248581 Cpl. F. R. Rodgers, 200362 S/M. S. Ryan, and 1659 Serjt. H. A. Sargent (N. Russia); 242320 Cpl. F. H. J. Sheail (S. Russia); 207995 Cpl. E. F. Shephard (N. Russia); 168404 A./C. 1 J. W. Smith, and 329900 Serjt. J. J. Smith (S. Russia).

329055 Serjt. F. W P. Taylor (N. Russia).

65080 A./C. 2 H. T. Walters, 314428 Cpl. W. G. P. Watling, and 236178 L.A.C. S. O. White (N. Russia).

Note.—No further rewards will be granted to R.A.F. personnel in connection with the war, except in special cases of services overseas at the present time, in localities where a state of warfare exists.

Foreign Decoration.

Major C. W. Wise, O.B.E., M.C. (R.A.S.C.), has been granted unrestricted permission to wear the 4th Class Order of the White Eagle, with swords, conferred on July 22nd by the King of Serbia for services in connection with the war.

Correction.

Flt. Lt. H. Edwards (formerly R.N.A.S.) is the correct description of the officer designated "Pilot Officer Harry Edwards" in "Gazette" of Dec. 16th. (Mentioned for services whilst a prisoner of war.)

Air Ministry, Dec. 23rd.

R.A.F.—The classification of Flt. Lt. D. F. Massy is "(S.O.)," and "(T.)" as stated in "Gazette" of Nov. 25th.

The notification in "Gazette" of Aug. 1st appointing Capt. L. E. Palmer (T.) to a permanent commn. is cancelled.

The following temp. appointment is made :—Staff Officer, 4th Class.—(Q.)—Flying Officer P. J. Murphy, Dec. 9th.

Flying Branch.—H. Ward (late Lt. (Hon. Capt.), R.A.F.) is granted a temp. commn. as Lt. (A.), and to be Hon. Capt., June 1st.

Flying Officer C. D. Bennett to be Flying Officer (A.), from unempld. list April 30th, prec. next below Flying Officer G. C. Body.

The following Flight Cadets are granted temp. commns. as Sec. Lts. (A.) :—D. Semmer, P. J. K. Pinel, J. M. Miller, A. C. Symon, Oct. 17th, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Flying Officer W. J. Murphy (Lt., Border R.), Dec. 11th, 191; Flying Officer D. K. Paris, M.C. (Lt., R.F.A.), April 14th; Pilot Officer F. C. Lyall (Lt., R. Fus.); Flying Officer M. F. J. R. Mahony (Lt., R.I. Rif.), Nov. 7th; Flying Officer R. M. Roberts (Lt., York. L.I.), Nov. 10th; Pilot Officer C. H. W. Clarke (Lt., R. Fus.), Nov. 14th; Flying Officer W. R. Bucknall (Lt., Black Watch), Nov. 15th; Wing Comdr. C. Bovill, O.B.E. (Maj., R.G.A.), Nov. 20th; Flying Officer W. E. Knowlden (Lt., Border R.), Nov. 24th; Flying Officer C. C. L. Dowdall (Lt., R. Berks R.); Pilot Officer T. H. Langrishe (Sec. Lt., Ir. Gds.), Nov. 28th; Sqdn. Ldr. R. E. Lewis (Capt., W. Indies R.), Nov. 29th; Sqdn. Ldr. M. W. Noel, A.F.C. (Capt., L'pool R.), Dec. 1st; Flying Officer (Hon. Flt. Lt.) J. E. Hallonquist, D.F.C. (Capt., Sask. R.), Dec. 2nd; Sqdn. Ldr. L. Dawes (Capt., Midd'x R.), Dec. 6th; Sqdn. Ldr. F. B. Binney (Maj., R.F.A.), Dec. 7th.

Wing Comdr. W. Briggs (Eng.-Comdr., R.N.) relinquishes his temp. R.A.F. commn. on return to Naval duties, Dec. 16th.

Sec. Lt. A. T. Bower relinquishes his commn. on ceasing to be empld., Jan 28th.

The following are transferred to unempld. list :—Sec. Lt. W. H. A. Rickett, Jan. 11th; Sec. Lt. (Hon. Lt.) S. W. Taylor, Jan. 13th; Sec. Lt. R. H. Stanbridge, Jan. 23rd; Lt. V. L. Dowling, Jan. 31st; Sec. Lt. J. W. Smith, Feb. 1st; Lt. D. D. Richardson, Feb. 3rd; Lt. A. Scott, M.C., March 19th; Capt. G. L Elliott, April 1st; Lt. E. N. Ruffle, April 11th; Sec. Lt. H. H. Weeks, April 13th (substituted for notification in "Gazette" of Oct. 17th); Sec. Lt. W. L. Martin, April 16th; Lt. S. B. Lee, April 19th; Sec. Lt. A. McWilliam, April 21st; Lt. H. W. Smith, May 10th; Sec. Lt. V. R. Homersham, May 18th; Sec. Lt. H. A. Hoth, Sec. Lt. J. J. H. Hyde, May 20th; Lt. F. A. Pumphrey, May 21st; (substituted for notification in "Gazette" of May 13th); Lt. A. H. Gearing, June 1st; Sec. Lt. G. J. Hoffmeyr, Sec. Lt. W. Hornby, June 14th; Sec. Lt. H. R. Humphreys, Sec. Lt. J. Mellor, July 10th; Sec. Lt. N. G. Holtby, Sec. Lt. W. G. Howse, July 11th; Sec. Lt. G A. Hogdetts, Sec. Lt. G. W. Hopkins, Sec. Lt. W. W. McCharles, July 12th; Sec. Lt. C. E. Irving, July 17th; Lt. P. F. C. Howe, July 29th; Lt. A. McD. Hyslop, Aug. 16th; Lt. P. Hotine, Lt. S. L. Russell, Aug. 22nd; Lt. C. H. Holcombe, Aug. 29th; Sec. Lt. R. G. H. Hopley, Sec. Lt. E. Hughes, Sept. 9th; Sec. Lt. (Hon. Lt.) J. H. L. Farfan, Sec. Lt. S D. Horne, Sept. 20th; Lt. F. L. Hale, D.F.C., Sept. 26th; Sec. Lt. E. S. Clark, Sec. Lt. H. C. Ingram, Sec. Lt. M. F. Johnstone, Lt. G. W. Sweney, Sept. 28th; Lt. A. B. Holden, Sec. Lt. N. E. Horton, Sec. Lt. A. F. Inch, Capt. K. G. MacDonald, Lt. J. H. K. Roughsedge, Lt. A. G. Spencer, Sept. 29th; Lt. R. McIntosh, Oct. 2nd; Sec. Lt. G. P. Hendrickze, Oct. 6th; Lt. J. C. A. Jenks, Oct. 14th; Lt. J. H. S. Broughall, Oct. 17th; Sec. Lt. G. C. Fenton, Oct. 25th; Sec. Lt. R. F. Preedy, Nov. 6th; Sec. Lt. J. S. Morton, Nov. 10th; Lt G. V. De Boissiere, Nov. 12th; Sec. Lt. W. C. Ingram, Nov. 13th; Sec. Lt. C. H. Stephens, Nov. 13th (substituted for notification in "Gazette" of Oct. 24th); Lt. L. M. Gerson, Nov. 21st; Capt. C. A. Hooper, Sec. Lt. G. S. Turner, Nov. 27th; Sec. Lt. R. A. Rowberry, Nov. 29th; Sec. Lt. (Hon. Lt.) J. P. Jones, Sec. Lt. J. Stopford, Lt. E. J. Suter, Nov. 30th; Sec. Lt. O. L. Canton, Sec. Lt. L. C. Holliday, Lt. M. Minter, Dec. 1st; Lt. H. R. Carson, Lt. D. N. Harland, Sec. Lt. L. A. Hill, Dec. 2nd; Capt. C. O. B. Beale, D.S.O., Sec. Lt. E. A Siegrist, Capt. G. F. Smylie, D.S.C., Dec. 3rd; Lt. L. A.

A. Bernard, Sec. Lt. C. L. Gall, Sec. Lt. G. Hughes, Lt. F. T. S. Sehl, Sec. Lt. C. H. Stockwell, Sec. Lt. G. Williams, Lt. H. L. Woolison, Dec. 4th; Sec. Lt. E. S. Housley, Dec. 5th; Lt. M. Lee, Sec. Lt. M. J. MacKessack, Sec. Lt. R L. Taillon, Dec. 7th; Lt. F. A. Flynn, Lt. R. H. Walker, Dec. 8th; Lt. T. J. Carroll, Capt. C. MacLaurin, D.S.C., Lt. T. J. West, M.C., Dec. 10th; Lt. L. W. Timmis, Dec. 11th; Sec. Lt. F. J. Brunton, Sec. Lt. W. Jeffries, Lt. A. L. Sinclair, Dec. 12th; Sec. Lt. P. J. O'Brien, Dec. 16th; Lt. K. W. Jones, Dec. 20th; Sec. Lt. W. A. Bartlett, Dec. 22nd.

Maj. C. H. Dixon, M.C., D.F.C. (Lt., K.O.Y.L.I.), resigns his commn. and is permitted to retain rank of Maj., Dec. 24th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—P. D. P. Hamilton (contracted on active service), April 16th; L. M. Whittington (caused by wounds), Dec. 13th; C. M. Eastley (Lt., R.F.A., T.F.) (contracted on active service), Dec. 17th.

Lt. E. A. Westall, A.F.C. (Lt., Cameronians (Sco. Rif.)), relinquishes his commn. on account of ill-health contracted on active service, Dec. 16th.

Lt. H. G. Ross (Devon R.E., T.F.) relinquishes his commn. on account of ill-health, April 13th (substituted for notification in "Gazette" of Dec. 31st, 1918).

Lt. N. S. Dewey, M.C. (Lt., R.H. and R.F.A.) relinquishes his temp. R.A.F. commn. on retirement from Army, Dec. 13th.

Sec. Lts. relinquish their commns. on account of ill-health contracted on active service and are permitted to retain their rank :—G. H. Whitehead, Dec. 12th; Wm. Hall, Dec. 13th.

The surname of Sec. Lt. J. W. Lyell is as now described, and not "Lyrell" as stated in "Gazette" of Aug. 6th, 1918.

The notification in "Gazette" of May 9th concerning Lt. H. J. Walkerdine, M.C., is cancelled.

The notification in "Gazette" of June 13th concerning Sec Lt. A. T. Bower is cancelled.

The notification in "Gazette" of Oct. 28th concerning Lt. F. Wood is cancelled.

The notification in "Gazette" of Nov. 7th concerning Lt. J. R. Field is cancelled. (Notification in "Gazette" of Oct. 24th to stand.)

The notification in "Gazette" of Nov. 25th concerning Lt. C. N. L. Lomax is cancelled.

ADMINISTRATIVE BRANCH.—Lt. A. Shelley is graded for purposes of pay and allowances of Capt. whilst empld. as Capt., from Feb. 4th to Aug. 1st.

Pilot Officer G. P. Abbott is graded for purposes of pay and allowances of Flt. Lt. whilst empld. as Flt. Lt., Sept. 23rd.

Flying Officer M. J. Norton to be Flying Officer, from (S.O.), Nov. 11th.

Sec. Lt. E. H. McEnery to be Lt., June 20th

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Flt. Lt. D. G. F. Darley (Capt., 4th Drag. Gds.), May 24th (substituted for notification in "Gazette" of July 1st); Flying Officer M. Jacks (Lt., E. Lancs. R.), Nov. 3rd; Flt. Lt. C. E. Dalton (Capt., R. War. R.), Dec. 4th.

The following are transferred to unempld. list :—Lt. R. W. Rea, Jan. 15th; Sec. Lt. L. R. P. de C. Le Merle, March 18th; Lt. N. A. Holmes, June 25th; Lt. A. R. Porter, Sept. 13th; Lt. J. W. Ferguson, Sept. 28th; Lt. E. Higgs, Oct. 21st (substituted for notification in "Gazette" of Nov. 4th, wherein this officer was shown as Sec. Lt.).

Capt. H. C. Jones, Nov. 7th (substituted for notification in "Gazette" of Nov. 21st); Lt. J. Sims, Nov. 27th; Lt. H. H. C. Lamb, Nov. 28th; Lt. R. G. Green, Lt. G. Heard, Nov. 29th; Sec. Lt. J. E. Sankey, Sec. Lt. J. K. Small, Nov. 30th; Capt. C. V. Mercer, Dec. 1st; Maj. C. S. Danby, M.C., Dec. 2nd; Sec. Lt. A. H. R. Gowie, Capt. M. W. L. Hawkes, M.C., Sec. Lt. R. Pringle, Dec. 4th; Sec. Lt. J. L. Green, Dec. 5th.

Sec. Lt. W. T. Leonard relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, May 1st (substituted for notification in "Gazette," May 16th, wherein this officer was shown under "Flying Branch").

The surname of Lt. F. F. Norris is as now described, and not Morris as stated in "Gazette" of May 9th.

The initials of Lt. W. M. Paterson are as now described, and not H. M., as stated in "Gazette" of May 2nd.

The notification in "Gazette" of Sept. 16th concerning Sec. Lt. J. Mellor is cancelled.

The notification in "Gazette" of May 13th concerning Sec. Lt S. D. Connolly is cancelled.

The notification in "Gazette" of Nov. 18th concerning Sec. Lt. C. O. D. Kidd is cancelled.

TECHNICAL BRANCH.—Lt. T. A. Ellis to be actg. Capt whilst empld. as Capt., Grade (A.), April 1st, 1918.

Flt. Lt. P. J. H. Sumner to be Flt. Lt., Grade (B), from (H.O.), Sept. 10th (substituted for notification in "Gazette" of Sept. 26th).

Pilot Officer G. H. Brown to be Pilot Officer, Grade (A), from (S.O.), and is graded for purposes of pay and allowances as Flt. Lt. whilst empld. as Flt. Lt., Grade (A.), Dec. 1st.

The following Lts. are graded for purposes of pay and allowances of Capts. whilst empld. as Capts., Grade (B.) :—W. A. Kingston, May 1st; F Petch, M.B.E., May 1st to Oct. 10th.

Lt. H. G. Baker is graded for purposes of pay and allowances of Lt. whilst empld. as Lt., Grade (A.), April 10th.

The following Sec. Lts. are graded for purposes of pay and allowances of Lt. whilst empld. as Lt., Grade (A.) :—(Hon. Lt.) R. E Moore, H. P. Strong, May 1st.

Sec. Lt. C. Rawdon-Schofield (since relinquished his commn.) to be Lt., Grade (B.), April 2nd, 1918.

The following relinquish their temp R.A.F. commns on return to Army duty :—Sqdn. Ldr. H. R. Vagg (Lt., Som. L.I.), Dec. 4th; Flying Officer (Hon. Flt. Lt.) E. J. Iangridge (Adjt. and Capt., N. Staff. R.), Dec. 8th.

The following are transferred to unempld. list :—Lt. H. Linfield, Jan. 26th; Lt. F. W. Poat, Feb. 25th; Lt. E. G. Thompson, July 1st; Sec. Lt. S. G. G. Ashley, Aug. 12th; Lt. E. N. Gregory, Aug. 22nd; Sec. Lt. A. H. Jackson, Sept. 29th; Lt. G. F. Kennedy, Oct. 6th; Sec. Lt. C. H. N. Nunn, Oct. 14th; Lt. T. B. Jones, Nov. 8th; Lt. A. N. Greg, Nov. 11th (substituted for notification in "Gazette" of Nov. 28th); Sec Lt. W. E. Hunt, Nov. 22nd; Capt. E. V. King-Hall, Nov 29th; Lt. E. C. F. O'Connor Fenton, Lt. R. Macfarlane, Lt. H. J. Skingle, Nov. 30th; Lt. J. M. Patten, Dec. 1st; Lt. F. G. H. Hooper, Dec. 2nd; Sec. Lt. A. Gillingham, Sec. Lt. J. Ireland-Low, Dec. 4th; Sec. Lt. J. H. Furniss, M.B.E., Sec. Lt. A. V. Stanier, Dec. 10th; Capt. L. G. Fenner, Dec. 14th.

Capt. A. Belton, O.B.E. (Lancs. Fus.), relinquishes his commn. on account of ill-health caused by wounds, and is granted the rank of Maj., Nov. 4th (substituted for notification in "Gazette" of Nov. 14th).

Sec. Lt. (Hon. Lt.) C. D. Jackman (Lt., Norf. R.) relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain the rank of Lt., Nov. 11th (substituted for notification in "Gazette" of Nov. 25th).

MEDICAL BRANCH.—The following Flying Officers to be Flt. Lts. :—T. J. X. Canton, Nov. 25th; P. McDiarmid, Nov. 30th.

Capt. A. Kirkhope is transferred to the unempld. list, Nov. 30th.

The notification in "Gazette" of Aug. 19th concerning Flying Officer L. C. Broughton-Head is canceled.

W.R.A.F.—The following officers relinquish their appointments at their own request :—

Administrator.—Mrs. H. Simeon (D.A.C.), Dec. 15th.

Asst. Administrator.—C. Brothers, Dec. 2nd.

The following officers relinquish their appointments on completion of service :—Administrators.—Mrs. A. Rathbun (D.A.C.), Nov. 15th; I. Waistell, Dec. 4th.

Deputy Administrators.—M. M. Cottrill, Nov. 4th; Mrs. J. C. Paterson, Nov. 8th; Mrs. M. Gerard, Nov. 22nd; A. M. MacKintosh (actg. Adm. D.A.C.), Nov. 30th.

Asst. Administrators.—M. Cunninghame (actg. Dep. Adm.), Oct. 11th; E. Ingram (actg. Dep. Adm.), Oct. 14th; E. M. Lovat Fraser (actg. Dep. Adm.), Oct. 17th; G. P. Cassidy, J. M. Morton, Oct. 30th; E. G. Hamer, G. M. Master, M. H. Bell, Nov. 4th; E. J. Henderson, Nov. 8th; D. G. Negus, Nov. 18th; F. E. Dunn, L. M. Goddard, Nov. 22nd; M. Smith, F. E. Ball, Nov. 24th; M. C. Grantham (actg. Dep. Adm.), Nov. 25th; M. H. Grant, Nov. 27th; Mrs. J. Christmas (actg. Dep. Adm.), Nov. 28th; M. Peppercorn (actg. Dep. Adm.), D. Copland (actg. Dep. Adm.), Nov. 29th; J. I. C. Aitken (actg. Dep. Adm.), G. M. F. Bradley (actg. Dep. Adm.), Dec. 3rd.

MEMORANDA.—The following Overseas Cadet is granted an hon. commn. as Sec. Lt. :—152903 A. E. O'Carroll, Nov. 7th.

The following Proby. Flt. Officers are granted hon. commns. as Sec. Lts. :—A. F. Long, R. G. H. Stone, March 7th, N. M. Hunter, April 2nd.

The following Cadets are granted hon. commns. as Sec. Lts. :—103150 G. Hampson, May 1st; M2/021532 L. E. Washer, May 6th; 39086 W. J. Sorrell, Nov. 30th.

Temp. Hon. Capt. R. E Rollings relinquishes his commn. on ceasing to be empld., Dec. 16th

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Flying Officer J. H. Truscott (Lt. (Devon R.), Dec. 8th; Flt. Lt. A. Smith (Hamps. R.), Dec. 11th

The notification in "Gazette" of June 13th concerning No. 177075 F. Silver is cancelled.

The notification in "Gazette" of July 1st concerning 184038 Cadet S. M. McDonald is cancelled.

PERSONAL NOTICES.

NAVAL.

MARRIAGE.

SMYTH-PIGOTT—FEILDING.—The marriage took place on Dec. 22nd (instead of Dec. 30th, as previously arranged), at Newnham Paddox, Lutterworth, of Wing Comdr. R. Smyth-Pigott, D.S.O., R.A.F. (late R.N.A.S.), and Lady Clare Feilding. Owing to the recent death of the Countess of Denbigh, the bride's mother, the ceremony was very quiet, only immediate relatives of the bride being present. Father van Dillen officiated.

MILITARY.

DEATH.

EVERSDEN.—Capt. Robert E. Eversden, R.A.F., who was killed in the aerodrome at Ekaterinodar, South Russia, on Aug. 15th, was 24 years of age. Capt. Eversden, with one or two other English officers, were living in a railway carriage, but slept in a tent at some distance away. About midnight Capt. Eversden left the tent to get something out of his kit when he was shot dead by a sentinel. A report of the official inquiry into the circumstances of his death has been promised by Mr. Churchill.

Capt. Eversden, after serving in the Yeomanry and in the 19th Hussars, received a commission in the Suffolk Yeomanry and went to Gallipoli in September, 1915. After Gallipoli he served in German East Africa and was seconded for the R.F.C. in Egypt in November, 1918. From Egypt, where he was an instructor in aviation at Aboukir, he served in Palestine and did remarkable work in Allenby's campaign. He was made captain in the Suffolk Yeomany in June, 1916, and in the R.A.F. in April, 1917.

BIRTH.

RYDON.—On Dec. 21st, at Sandgate, Queensland, the wife of Capt. H. E. Rydon, R.A.F., of a son.

AIR FORCE.

DEATH.

BRADLEY.—Lieut. Stanley Blackall Bradley, late R.A.F., who died, aged 32, as a result of the aeroplane accident at Caterham on Dec. 11th, was privately educated at Cranleigh, subsequently training for four years in the Crewe Works of the L.N.W. Railway Co. He then entered Caius College, Cambridge, where he remained three years and read engineering. On leaving the University in 1913, he joined the Engineering Works of Craddocks, Wakefield, subsequently passing on to the house in India. He joined No. 110 Squadron, T.F., R.A.F., during the latter part of the war. When the war came to an end Mr. Bradley joined the staff of the Aircraft Travel and Transport Company. On the firm's behalf he visited Brazil, and on his return became one of the pilots on the London—Paris Service.

Mr. Bradley was the fourth son of Rev. Walter Bradley, late Vicar of Birchfield, Birmingham.

MARRIAGES.

BELLORD—CARDEW.—The marriage of Captain Cuthbert G. Bellord, late R.A.F., eldest son of Mr. E. J. Bellord, and Margaret Isabel, elder daughter of Sir Alexander Cardew, K.C.S.I., and Lady Cardew, C.B.E., took place quietly on Dec. 9th at St. James's Church, Spanish Place.

MACNAB—RADCLIFFE.—On Dec. 12th, at St. Margaret's, Westminster, Capt. J. Alexander Macnab, R.A.F., only son of the late J. A. Macnab and Mrs. Macnab, of Harrogate, was married to Irene Marguerite Campbell, only daughter of Commander C. A. Radcliffe, R.N., and Mrs. Radcliffe by the Rev. C. Whincup, of Heaton, uncle of the bridegroom.

MARSHALL—MITCHELL.—On Dec. 23rd, at the Church of St. Mary, Beddington, Surrey, Capt. Gerald S. Marshall, O.B.E., R.A.F. (Med.), was married to Kathleen Mitchell, late Deputy Administrator, W.R.A.F.

SOUTHALL—TOMPKINS.—On Dec. 22nd, at St. Edburg's Church, Bicester, Mr. A. W. Southall, R A.F., son of Mr. and Mrs. Southall, of Bridge Gate, Retford, was married to Marjorie Mary, only daughter of the late Mr. W. Tompkins and Mrs. Tompkins, of Bicester.

ENGAGEMENTS.

DUTSON—HUDLESTON.—The engagement is announced between Jack Dutson (late Captain, R.A.F.), only son of Mr. and Mrs. William Dutson, of Bristol, to Dorothy, younger daughter of Mr. and Mrs. R. J. Hudleston, of Portishead.

JAMES—SADDINGTON.—The engagement is announced of Lieut. D. Brodie James (late R.A.F.), younger and only surviving son of Mr. and Mrs. A. F. Brodie James, of Kensington, W., and Miss Margaret Saddington, only daughter of Mr. and Mrs. H. Saddington, 15, Brunswick Square, Hove.

WAGHORN—SINGLETON-WISE.—The engagement is announced between Capt. Hugh Colin Waghorn, O.B.E., R.A.F., only son of Hugh Waghorn, of Wandsworth Common, S.W., and Miss Marjorie Agnes Janet Singleton-Wis eldest daughter of Ernest Singleton-Wise, of Bexhill, and Deepcove, British Columbia.

BIRTHS.

HAMERSLEY.—On Dec. 25th, at 62, Portsmouth Road, Woolston, Clarice (née Lees), the wife of Capt. H. A. Hamersley, M.C., late A.I.F. and R.A.F., of a son.

POWER.—On Dec. 8th, at Whoberley, Wendover, Bucks, the wife of Captain D'Arcy Power, R.A.F. Med. Ser., of a daughter.

PRESTON.—On Dec. 21st, at Cairo, the wife of Lieut. R. Chevallier Preston, R.A.F., of a son.

QUICK.—On Wednesday, Dec. 17th, at Torquay, the wife of Capt. J. T. Quick, late R.A.F.—of a daughter.

RABAGLIATI.—On Dec. 8th, at Velindre, Woburn Sands, Bucks, the wife of H. Victor Rabagliati, barrister-at-law, late Captain R.A.F., of a son.

TOMKINSON.—On Dec. 20th, at The Glen, Brook Lane, Felixstowe, to the wife of Squadron Leader Lancelot Tomkinson, A.F.C., R.A.F.—a daughter.

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ROYAL AERO CLUB NOTICES.

THE FLYING SERVICES FUND COMMITTEE.

A meeting of the Flying Services Fund Committee was held on Monday, Dec. 15th, 1919, when there were present:—Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F., in the chair; Mr. Chester Fox; Sqdn. Leader T O'B. Hubbard, M.C., R.A.F.; and the Secretary.

APPLICATIONS FOR ASSISTANCE.—Twenty-seven applications for assistance were considered, and grants and allowances were voted amounting to £290.

HOUSE COMMITTEE.

A meeting of the House Committee was held on Tuesday, Dec. 16th, 1919, when there were present:—Mr. Ernest C. Bucknall in the chair, Mr. Henry Knox, Mr. J. Stewart Mallam, and the Secretary.

SPECIAL COMMITTEE MEETING.

A special meeting of the Committee was held on Wednesday, Dec. 17th, 1919, when there were present:—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S., in the chair; Mr. Ernest C. Bucknall; Lieut.-Col. Spenser, D. A. Grey, D.S.O.; Sqdn. Leasder T. O'B. Hubbard, M.C., R.A.F.; Lieut.-Col. Mervyn O'Gorman, C.B.; Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F.; and the Secretary.

ELECTION OF MEMBERS.—The following new members were elected:—Percy Arthur Brooksbank, Flt. Lt. Leonard Herbert Cockey, R.A.F.; Capt. Alexander Paul Davidson, R.A.F. and H.L.I., Flt. Lt. Joseph Stewart Temple Fall, D.S.C., R.A.F.; Major Frederick Whittington Gamwell, R.A.F., Capt. John Osborn Groves (late R.A.F.), Capt. Geoffrey Herbert Hooper (late R.A.F.), Flt. Lt. Gerald Edward Livock, R.A.F., Hon. Sec. Lt. Douglas Marsh Mackay (King's Liverpool Regiment), Flt. Lt. Thomas Henry Newton, R.A.F., Lieut. Cuthbert Hanson Oliver (S..), Charles Osenton.

TEMPORARY HONORARY MEMBERSHIP.—Lieut. W. Coppens (Belgian Air Attaché), Capt. Gilbert de la Ferrière (Assistant French Air Attaché).

FLYING SERVICES FUND.—The report of the meeting of the Flying Services Fund Committee held on Dec. 15th, 1919, was received and adopted.

HOUSE COMMITTEE.—The reports of the meetings of the House Committee held on Dec. 2nd and 16th, 1919, were received and adopted.

FEDERATION AERONAUTIQUE INTERNATIONALE.—The following were appointed to represent the Club at the meeting of the Bureau of the Federation Aeronautique Internationale to be held in Paris on Tuesday, Jan. 6th, 1920, at 10 a.m.:—Lieut.-Col. Mervyn O'Gorman, C.B., Mr. Harold E. Perrin (secretary).

BRITISH RECORDS.—On the motion of the Chairman, it was unanimously resolved that the following British records be granted:—

Pilot: Capt. G. W. Gathergood. Machine: Airco 9R. (Aircraft Manufacturing Co., Ltd.). Motor: 450 h.p. Napier "Lion" (D. Napier and Son, Ltd.). Date: Dec. 6th, 1919.

DISTANCE IN A GIVEN TIME: CLOSED CIRCUIT.

Aviator and One Passenger.

Time.	Distance.	K.P.H.	M.P.H.
¼ hr.	57.29 kil. (35.60 miles)	229.16	142.40
½ hr.	115.60 kil. (71.83 miles)	231.20	143.66

SPEED: CLOSED CIRCUIT WITHOUT ALIGHTING.

Aviator and One Passenger

Distance.	Time.	K.P.H.	M.P.H.
50 kil.	13 min. 7 sec.	228.72	142.12
100 kil.	26 min. 1 sec.	230.62	143.30
150 kil.	38 min. 47 sec.	232.05	144.19

GREAT BRITAIN-AUSTRALIA FLIGHT.—The following cablegram to the Prime Minister of Australia was confirmed:—

> Subject to verification of machine, Capt. Ross Smith has fulfilled the conditions laid down by Australian Government for £10,000 prize for flight from Great Britain to Australia. The Royal Aero Club, under whose competition rules and auspices the flight was made, will award prizes to Captain Ross Smith Royal Aero Club tenders its heartiest congratulations to the Prime Minister and all Australians on the successful accomplishment of this epoch-making flight.

The following message from Rear-Admiral H. S. Knapp, United States Navy, dated Dec. 11th, 1919, was read:—

> Permit me to congratulate you upon the successful completion of the England to Australia flight. The indomitable pluck and perseverance of Captain Smith and his crew is typical of the spirit of British airmen, and their accomplishment adds another glorious page to the history of aviation achievements.

"DAILY EXPRESS" £10,000 PRIZE.—The regulations for this prize were approved.

FACILITIES FOR TOURING.—Group Captain C. R. Samson, C.M.G., D.S.O., R.A.F., and Lieut.-Colonel Spenser D. A. Grey, D.S.O., were appointed a Sub-Committee to consider what steps the Club should take regarding the publication of aerial routes and maps for touring.

THE FLYING SERVICES' FUND.

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Secretary: H. E. Perrin.

Bankers: Messrs. Barclays Bank, Ltd., 4, Pall Mall East, London, S.W.1.

Total subscriptions received to Dec. 1st, 1919, £16,796 15s. 7d.

W. M. Lester, £5 5s.; J. E. Rosen, £1 1s.; Mrs. H. G. E. W. P. Consett, £2; Anonymous, £2; Capt. Leonard Miller (being instalment of the profits from the "Chronicles of 55 Squadron, R.F.C. and R.A.F."), £4; Right Hon. the Earl of Moray, £20; Rolls-Royce, Ltd., £105; Mrs. V. C. Johnson, £26 5s. Total, Dec. 20th, 1919, £16,962 6s. 7d.

ACROSS] AUSTRALIA.

It is now known that the machine used by Capt. Wrigley on his flight from Melbourne to Port Darwin, which was reported recently, was a B.E.2e biplane. 90 h.p. R.A.F. engine, built by the British and Colonial Aeroplane Company, Ltd., in 1915.

THE BANGKOK AERODROME.

Capt. Ross Smith stated, with regard to his flight to Australia, that the first real aerodrome he encountered after leaving London was that outside Bangkok. This aerodrome was designed and erected by Barrow Brown and Co., Ltd., of Bangkok, with material supplied through their London agents, John Birch and Co., Ltd., 2, London Wall Buildings, E.C. The structural steel work was by E. Wood and Co., of Manchester.

LUBRICATION ON THE AUSTRALIAN FLIGHT.

Messrs. C. C. Wakefield and Co. had supplies of Castrol "R" at every stopping place on the route to Australia, and Captain Ross Smith was thus enabled to replenish without delay. Wakefield's have every reason to feel proud of their association with the latest and greatest feat in aviation.

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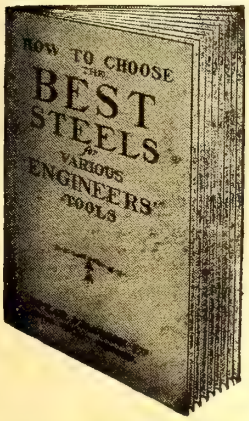

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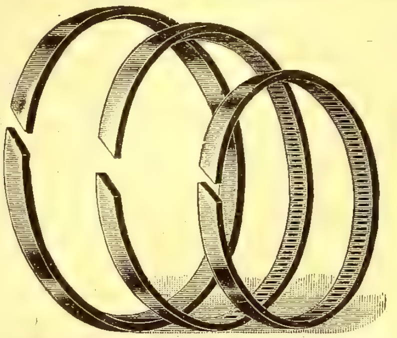

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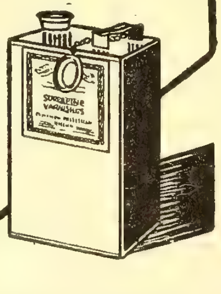

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